

=> d his ful

FILE 'REGISTRY' ENTERED AT 15:00:58 ON 20 FEB 2007

L1 STR  
L3 60 SEA SSS FUL L1  
L4 STR L1  
L5 2 SEA SUB=L3 SSS FUL L4

FILE 'HCAPLUS' ENTERED AT 15:16:33 ON 20 FEB 2007

L7 1 SEA ABB=ON PLU=ON L5  
D STAT QUE L7  
D IBIB ABS HITSTR L7 1  
L10 15 SEA ABB=ON PLU=ON ("ROWATT B"/AU OR "ROWATT BRIAN"/AU)  
L11 95 SEA ABB=ON PLU=ON "DAVIDSON ROBERT"/AU OR ("DAVIDSON ROBERT  
S"/AU OR "DAVIDSON ROBERT STEP"/AU OR "DAVIDSON ROBERT  
STEPHAN"/AU OR "DAVIDSON ROBERT STEPHEN"/AU OR "DAVIDSON  
ROBERT STEVEN"/AU)  
L12 311 SEA ABB=ON PLU=ON "DAVIDSON R"/AU OR ("DAVIDSON R S"/AU OR  
"DAVIDSON R STEPHEN"/AU OR "DAVIDSON R STEVEN"/AU)  
L13 107 SEA ABB=ON PLU=ON LAWRENCE S ?/AU  
L15 3 SEA ABB=ON PLU=ON L10 AND (L11 OR L12)  
L17 51 SEA ABB=ON PLU=ON (L10 OR L11 OR L12 OR L13) AND PHOTOINI?  
L18 51 SEA ABB=ON PLU=ON (L15 OR L17) NOT L7  
D STAT QUE L18  
D IBIB ABS HITSTR L18 1-51

FILE 'REGISTRY' ENTERED AT 15:28:20 ON 20 FEB 2007

L19 58 SEA ABB=ON PLU=ON L3 NOT L5

FILE 'HCAPLUS' ENTERED AT 15:28:24 ON 20 FEB 2007

L20 17 SEA ABB=ON PLU=ON L19  
L22 14 SEA ABB=ON PLU=ON L20 AND ?PHOTOINI?  
D STAT QUE L22  
D IBIB ABS HITSTR L22 1-14

#### FILE REGISTRY

Property values tagged with IC are from the ZIC/VINITI data file  
provided by InfoChem.

STRUCTURE FILE UPDATES: 19 FEB 2007 HIGHEST RN 921921-74-6

DICTIONARY FILE UPDATES: 19 FEB 2007 HIGHEST RN 921921-74-6

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TSCA INFORMATION NOW CURRENT THROUGH June 30, 2006

Please note that search-term pricing does apply when  
conducting SmartSELECT searches.

REGISTRY includes numerically searchable data for experimental and  
predicted properties as well as tags indicating availability of  
experimental property data in the original document. For information  
on property searching in REGISTRY, refer to:

<http://www.cas.org/ONLINE/UG/regprops.html>

FILE HCAPLUS

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FILE COVERS 1907 - 20 Feb 2007 VOL 146 ISS 9  
FILE LAST UPDATED: 19 Feb 2007 (20070219/ED)

New CAS Information Use Policies, enter HELP USAGETERMS for details.

This file contains CAS Registry Numbers for easy and accurate substance identification.

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=>
=> fil hcaplus
FILE 'HCAPLUS' ENTERED AT 15:16:33 ON 20 FEB 2007
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PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
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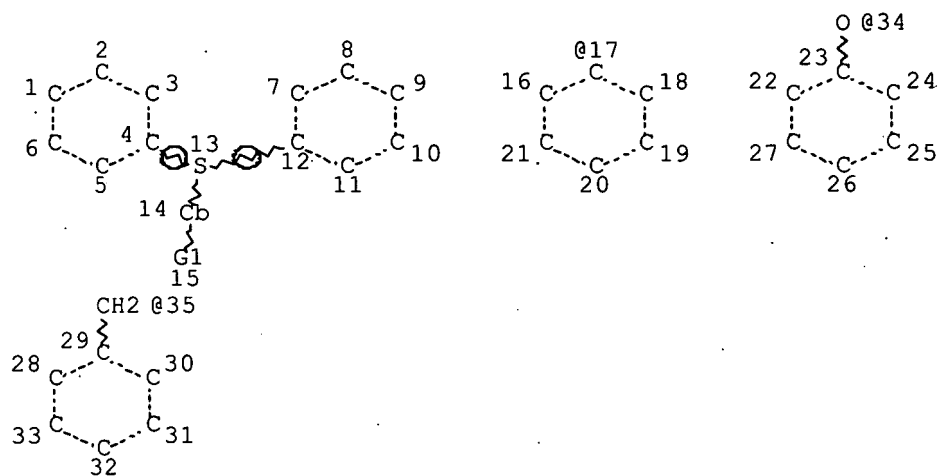
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FILE COVERS 1907 - 20 Feb 2007 VOL 146 ISS 9  
FILE LAST UPDATED: 19 Feb 2007 (20070219/ED)

New CAS Information Use Policies, enter HELP USAGETERMS for details.

This file contains CAS Registry Numbers for easy and accurate substance identification.

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=> d stat que 17
L1 STR
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VAR G1=17/34/35

NODE ATTRIBUTES:

NSPEC IS R AT 13

DEFAULT MLEVEL IS ATOM

GGCAT IS MCY AT 14

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

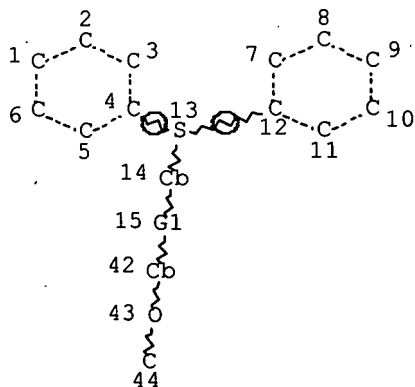
RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 35

STEREO ATTRIBUTES: NONE

L3 60 SEA FILE=REGISTRY SSS FUL L1

L4 STR



REP G1=(0-1) A

NODE ATTRIBUTES:

NSPEC IS R AT 13

DEFAULT MLEVEL IS ATOM

GGCAT IS MCY AT 14

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 18

STEREO ATTRIBUTES: NONE

L5 2 SEA FILE=REGISTRY SUB=L3 SSS FUL L4  
L7 1 SEA FILE=HCAPLUS ABB=ON PLU=ON L5

=> d ibib abs hitstr 17 1

L7 ANSWER 1 OF 1 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2004:482253 HCAPLUS Full-text

DOCUMENT NUMBER: 141:39756

TITLE: Sulfonium salts useful as cationic photoinitiators in  
energy-curable compositions and preparing cured  
polymeric compositions

INVENTOR(S): Davidson, Robert Stephen; Herlihy, Shaun Lawrence;  
Rowatt, Brian

PATENT ASSIGNEE(S): Sun Chemical B.V., Neth.

SOURCE: Brit. UK Pat. Appl., 44 pp.

CODEN: BAXXDU

DOCUMENT TYPE: Patent

LANGUAGE: English

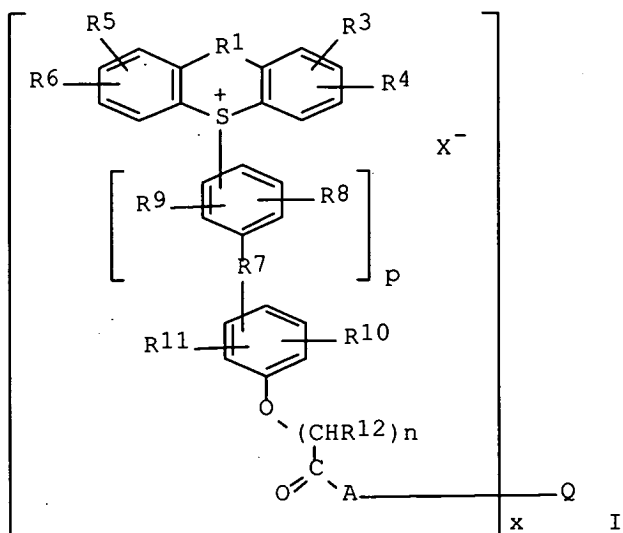
FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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GB 2396153	A	20040616	GB 2002-29081	20021212
CA 2509229	A1	20040701	CA 2003-2509229	20031210
WO 2004055000	A1	20040701	WO 2003-US39098	20031210
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW			
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AU 2003300838	A1	20040709	AU 2003-300838	20031210
EP 1581513	A1	20051005	EP 2003-813361	20031210
R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK			
BR 2003016763	A	20051025	BR 2003-16763	20031210
JP 2006518332	T	20060810	JP 2004-560739	20031210
US 2006241200	A1	20061026	US 2006-538243	20060515
PRIORITY APPLN. INFO.:			GB 2002-29081	A 20021212
			WO 2003-US39098	W 20031210

OTHER SOURCE(S): MARPAT 141:39756

GI



AB Compds. have the formula I; where R1 = direct bond, O, S, CH<sub>2</sub>, >C:O, (CH<sub>2</sub>)<sub>2</sub> or NR<sub>a</sub>, R<sub>a</sub> = H or C1-12-alkyl; R3-6 = H and substituents below; R8-11 = H, OH, and C1-4 alkyl; or R9 and R11 are joined to form a fused ring system with the benzene rings to which they are attached; R7 = direct bond, O or CH<sub>2</sub>; p is 0 or 1; substituents = alkyl, alkoxy, alkenyl, halogen, nitric, hydroxyl, aryl, aralkyl, aryloxy, aralkyloxy, arylalkenyl, cycloalkyl, carboxy, carboxyalkoxy, alkoxycarbonyl, aryloxy carbonyl, alkylcarbonyloxy, alkanesulfonyl, arenesulfonyl, alkanoyl or arylcarbonyl; n = 1-12; R12 represents a hydrogen atom, a Me group or an Et group, and, when n is greater than 1, the groups or atoms represented by R12 may be the same as or different from each other; A = [O(CHR13CHR14)a]<sub>y</sub>, [O(CH<sub>2</sub>)bCO]<sub>y</sub>, or [O(CH<sub>2</sub>)bCO](y-1)-[O(CHR13CHR14)a], where 1 of R13 and R14 = H and the other is H, Me or Et; a = 1-2; b = 4-5; Q is a residue of a polyhydroxy compound having 2-6 hydroxy groups; x > 1 but no greater than the number of available hydroxyl groups in Q; and when x > 1 but ≤ 2, y = 1-10; or when x > 2, y = 3-10; X is an anion; and esters. The compds. are useful as cationic photoinitiators, especially for use in surface coating applications, such as printing inks and varnishes intended to be cured by polymerization initiated by radiation.

IT 701916-14-5P

RL: CAT (Catalyst use); IMF (Industrial manufacture); PREP (Preparation);

USES (Uses)

(polymeric sulfonium salt cationic photoinitiators in energy-curable compns.)

RN 701916-14-5 HCAPLUS

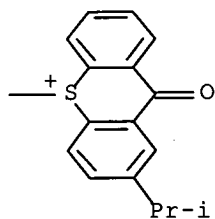
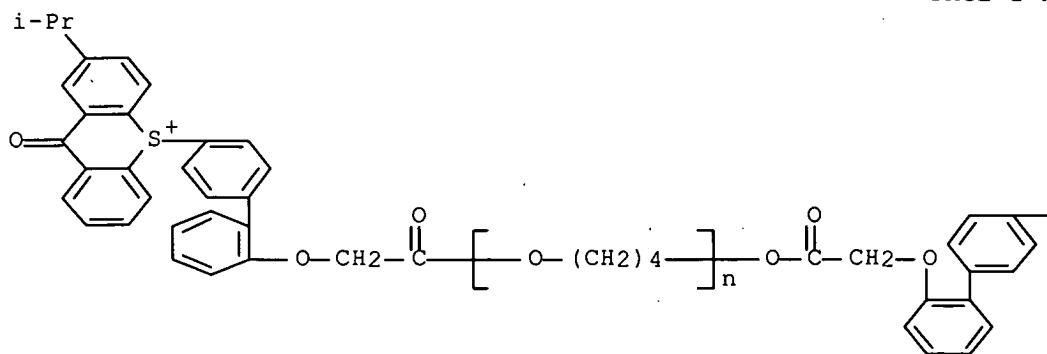
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CRN 701916-13-4

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CCI PMS

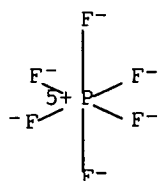


CM 2

CRN 16919-18-9

CMF F6 P

CCI CCS



REFERENCE COUNT:

4

THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS  
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

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E1 4 HERIKSTAD HALLGEIR/AU

E2 1 HERIKSTAD R/AU

E3 0 --&gt; HERILHY S/AU

E4	5	HERILIER H/AU
E5	2	HERILIER HELENE/AU
E6	1	HERILIER MRS H/AU
E7	1	HERIN COLETTE/AU
E8	3	HERIN DAVID V/AU
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E10	4	HERIN GRETA ANN/AU
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E12	1	HERIN HENRY H/AU

=> => e lawrence s/au

E1	1	LAWRENCE RYAN CHRISTOPHER/AU
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E21	1	LAWRENCE SALLY CLAIRE/AU
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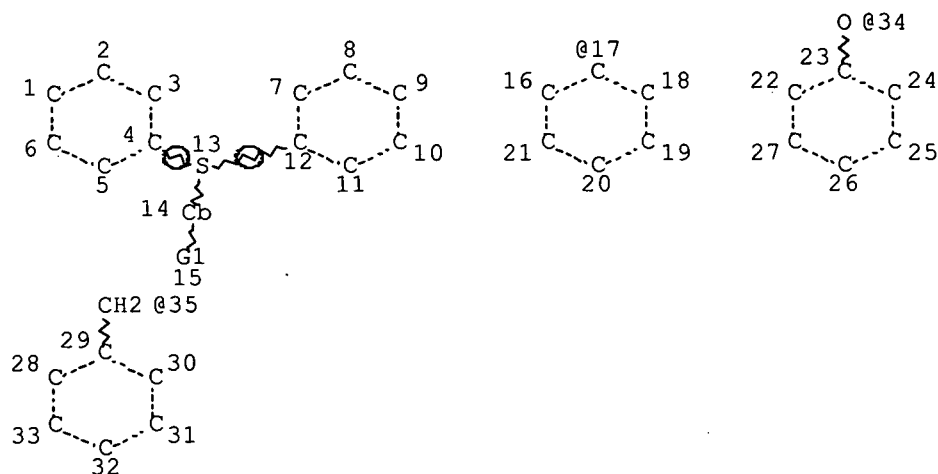
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E47	3	LAWRENCE SIMON/AU
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=> s lawrence s ?/au

L13 107 LAWRENCE S ?/AU

=> => d stat que 118

L1 STR



VAR G1=17/34/35

NODE ATTRIBUTES:

NSPEC IS R AT 13

DEFAULT MLEVEL IS ATOM

GGCAT IS MCY AT 14

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

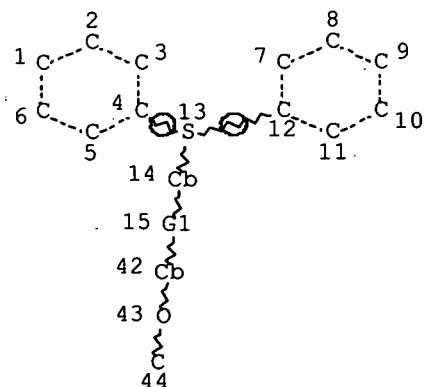
RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 35

STEREO ATTRIBUTES: NONE

L3 60 SEA FILE=REGISTRY SSS FUL L1

L4 STR





REP G1=(0-1) A  
NODE ATTRIBUTES:  
NSPEC IS R AT 13  
DEFAULT MLEVEL IS ATOM  
GGCAT IS MCY AT 14  
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:  
RING(S) ARE ISOLATED OR EMBEDDED  
NUMBER OF NODES IS 18

STEREO ATTRIBUTES: NONE

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L10 15 SEA FILE=HCAPLUS ABB=ON PLU=ON ("ROWATT B"/AU OR "ROWATT  
BRIAN"/AU)  
L11 95 SEA FILE=HCAPLUS ABB=ON PLU=ON "DAVIDSON ROBERT"/AU OR  
("DAVIDSON ROBERT S"/AU OR "DAVIDSON ROBERT STEP"/AU OR  
"DAVIDSON ROBERT STEPHAN"/AU OR "DAVIDSON ROBERT STEPHEN"/AU  
OR "DAVIDSON ROBERT STEVEN"/AU)  
L12 311 SEA FILE=HCAPLUS ABB=ON PLU=ON "DAVIDSON R"/AU OR ("DAVIDSON  
R S"/AU OR "DAVIDSON R STEPHEN"/AU OR "DAVIDSON R STEVEN"/AU)  
L13 107 SEA FILE=HCAPLUS ABB=ON PLU=ON LAWRENCE S ?/AU  
L15 3 SEA FILE=HCAPLUS ABB=ON PLU=ON L10 AND (L11 OR L12)  
L17 51 SEA FILE=HCAPLUS ABB=ON PLU=ON (L10 OR L11 OR L12 OR L13)  
AND PHOTOINI?  
L18 51 SEA FILE=HCAPLUS ABB=ON PLU=ON (L15 OR L17) NOT L7

=> d ibib abs hitstr l18 1-51

L18 ANSWER 1 OF 51 HCAPLUS COPYRIGHT 2007 ACS on STN  
ACCESSION NUMBER: 2006:878325 HCAPLUS Full-text  
DOCUMENT NUMBER: 145:273407  
TITLE: Energy-curable coating compositions containing  
oxetanes, epoxides, and cyclic carbonates  
INVENTOR(S): Standing, Stephen Stuart; Herlihy, Shaun Lawrence;  
Davidson, Robert Stephen  
PATENT ASSIGNEE(S): Sun Chemical Limited, UK  
SOURCE: Brit. UK Pat. Appl., 39pp.  
CODEN: BAXXDU  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
GB 2423521	A	20060830	GB 2005-3953	20050225
WO 2006093679	A1	20060908	WO 2006-US5444	20060216
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW			
RW:	AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ,			

CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH,  
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY,  
KG, KZ, MD, RU, TJ, TM

PRIORITY APPLN. INFO.:

GB 2005-3953

A 20050225

AB An energy-curable coating composition comprises an epoxide monomer or oligomer, a multifunctional oxetane, a cationic photoinitiator, and a cyclic carbonate, wherein the cyclic carbonate is present in an amount of at least 7% based on the composition. The cyclic carbonate may be present in an amount of 8-35%, preferably 15-25% and may be selected from propylene carbonate, glycerin carbonate, vinyl ethylene carbonate, ethylene carbonate, or butylene carbonate. The composition may be in the form of a varnish or printing ink, especially when formulated for inkjet printing. A process for preparing a cured coating composition is also disclosed, wherein the composition is applied to a substrate before exposure to radiation to cause curing. The radiation is typically in the form of UV radiation.

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L18 ANSWER 2 OF 51 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2006:878324 HCAPLUS Full-text

DOCUMENT NUMBER: 145:273406

TITLE: Energy-curable coating composition containing cyclic carbonates

INVENTOR(S): Standing, Stephen Stuart; Herlihy, Shaun Lawrence; Davidson, Robert Stephen

PATENT ASSIGNEE(S): Sun Chemical Limited, UK

SOURCE: Brit. UK Pat. Appl., 27pp.

CODEN: BAXXDU

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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GB 2423519	A	20060830	GB 2005-3948	20050225
WO 2006093678	A2	20060908	WO 2006-US5443	20060216
WO 2006093678	A3	20061109		
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PRIORITY APPLN. INFO.:

GB 2005-3948

A 20050225

AB An energy-curable coating composition comprises an epoxide monomer or oligomer, a cationic photoinitiator, and a cyclic carbonate, wherein the cyclic carbonate is present in an amount of at least 7 weight % based on the composition with the proviso that the composition does not comprise 57.1% 3,4-epoxy-cyclohexylmethyl-3',4'-epoxycyclohexane carbonate, 10.0% 3-ethyl-3-hydroxymethyl-oxetane, 15.0% pigment, 17.4% 10-biphenyl-4-yl-2-isopropyl-9-oxo-9H-thioxanthene-10-ium hexafluorophosphate (a cationic UV photoinitiator) as a 23 % solution in propylene carbonate, and 0.5 % leveling additive. The cyclic carbonate may be present in an amount of 8-35 weight %, preferably 15-

25 weight % and may be selected from propylene carbonate, glycerin carbonate, vinyl ethylene carbonate, ethylene carbonate, or butylene carbonate. The composition may be in the form of a varnish or printing ink, especially when formulated for inkjet printing. A process for preparing a cured coating composition is also disclosed, wherein the composition is applied to a substrate before exposure to radiation to cause curing. The radiation is typically in the form of UV radiation.

REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L18 ANSWER 3 OF 51 HCAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2006:878309 HCAPLUS Full-text  
 DOCUMENT NUMBER: 145:273405  
 TITLE: Energy-curable coating composition containing cyclic carbonates and epoxides  
 INVENTOR(S): Standing, Stephen Stuart; Herlihy, Shaun Lawrence; Davidson, Robert Stephen  
 PATENT ASSIGNEE(S): Sun Chemical Limited, UK  
 SOURCE: Brit. UK Pat. Appl., 24pp.  
 CODEN: BAXXDU  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
GB 2423520	A	20060830	GB 2005-3951	20050225
WO 2006093680	A1	20060908	WO 2006-US5447	20060216

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RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

PRIORITY APPLN. INFO.: GB 2005-3951 A 20050225

AB A sprayable energy-curable coating composition comprises an epoxide monomer or oligomer, a cationic photoinitiator, and a cyclic carbonate, wherein the cyclic carbonate is present in an amount of at least 7% based on the composition. The cyclic carbonate may be present in an amount of 8-35%, preferably 15-25% and may be selected from propylene carbonate, glycerin carbonate, vinyl ethylene carbonate, ethylene carbonate, or butylene carbonate. The composition may addnl. comprise an oxetane, which may be in the form of a monomer or a polymer. The composition may have a viscosity of 7-50 cP at 25° and may be a varnish, paint, or printing ink especially when formulated for inkjet printing. A process for preparing a cured coating composition is also disclosed, wherein the composition is applied to a substrate before exposure to radiation to cause curing. The radiation is typically UV radiation.

REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L18 ANSWER 4 OF 51 HCAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2006:654648 HCAPLUS Full-text

DOCUMENT NUMBER: 145:125241  
 TITLE: Fabrication methods for zirconia particles and sols  
 and their resin composites  
 INVENTOR(S): Davidson, Robert S.; Kolb, Brant U.;  
 Anderson, Danny B.; Higgins, James A.; Hendrickson,  
 Mark J.; Brady, John T.  
 PATENT ASSIGNEE(S): 3M Innovative Properties Company, USA  
 SOURCE: U.S. Pat. Appl. Publ., 17 pp.  
 CODEN: USXXCO  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2006148950	A1	20060706	US 2004-27426	20041230
WO 2006073783	A1	20060713	WO 2005-US46006	20051216
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				

PRIORITY APPLN. INFO.: US 2004-27426 A 20041230  
 AB Various methods were invented for fabrication of the zirconia particles and  
 sols that includes two sep. hydrothermal treatments. These sols were also  
 used to prepare resin composites. These particles are substantially non-  
 associated and have an average size no greater than 50 nm and may contain  
 yttrium.

L18 ANSWER 5 OF 51 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2006:456844 HCAPLUS Full-text  
 DOCUMENT NUMBER: 144:469729  
 TITLE: Piperazino based multi-functional  
 photoinitiators, preparation and uses  
 INVENTOR(S): Herlihy, Shaun Lawrence; Rowatt, Brian;  
 Davidson, Robert Stephen  
 PATENT ASSIGNEE(S): Sun Chemical Limited, UK  
 SOURCE: Brit. UK Pat. Appl., 27 pp.  
 CODEN: BAXXDU  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
GB 2420117	A	20060517	GB 2004-24831	20041110
WO 2006082477	A1	20060810	WO 2005-IB4157	20051109
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR,				

KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX,  
 MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE,  
 SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC,  
 VN, YU, ZA, ZM, ZW  
 RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE,  
 IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ,  
 CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH,  
 GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY,  
 KG, KZ, MD, RU, TJ, TM

PRIORITY APPLN. INFO.:

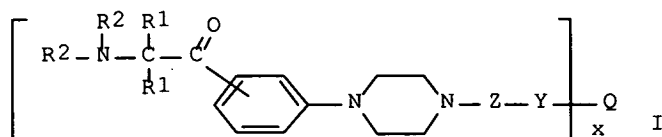
GB 2004-24831

A 20041110

OTHER SOURCE(S):

MARPAT 144:469729

GI



AB An aminoacetophenone-substituted piperazine compound is of formula I, wherein the substituents R1 are individually selected from C1-C10 alkyl groups and optionally substituted benzyl groups; the substituents R2 are individually selected from alkyl groups or, together with the nitrogen atom to which they are attached, represent a nitrogen-containing heterocyclic group; Z is selected from C6-C10 arylene groups and groups of formula --(CHR3)n--, where R3 is a hydrogen atom, a hydroxy group or a C1-C4 alkyl group, and n is a number from 0 to 6; Y is selected from carbonyl groups and the -CH2- group; Q is selected from the residues of mono- or polyhydroxy compds. having from 1 to 6 hydroxy groups; and x is a number from 1 to 6; and esters thereof. Preferred possibilities for Q include residues of ethylene glycol, propylene glycol, butylene glycol, glycerol, 2,2-propanediol, polyethylene glycol, polypropylene glycol, trimethylolpropane, di-trimethylolpropane, pentaerythritol and di-pentaerythritol. These compds. may be useful as multi-functional photoinitiators for use in coating compns. to be cured by radiant energy.

REFERENCE COUNT:

3

THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L18 ANSWER 6 OF 51 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2006:199765 HCAPLUS Full-text

DOCUMENT NUMBER: 145:507180

TITLE: Mono and bis substituted polymeric aminobenzoates as amine synergists for UV curing

AUTHOR(S): Anderson, D. G.; Bell, C. A.; Davidson, R. S.

CORPORATE SOURCE: Lambson Fine Chemicals Ltd., Neth.

SOURCE: RadTech Europe 05: UV/EB--Join the Winning Technology, [Conference Proceedings], Barcelona, Spain, Oct. 18-20, 2005 (2005), Volume 1, 437-443. RadTech Europe Association: The Hague, Neth. CODEN: 69HVYN

DOCUMENT TYPE: Conference

LANGUAGE: English

AB Type II photoinitiator systems are used extensively in litho and flexo printing of packaging inks. These systems require a hydrogen donor to

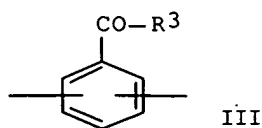
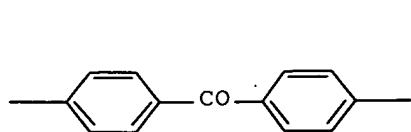
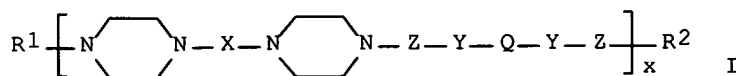
generate the curing system. Without them the radical generation necessary to bring about polymerization is very slow and ineffective for curing inks at speed. Simple aliphatic amines are very efficient hydrogen donors. However, they have several drawbacks. Typically these are odor and volatility. This work present new data on polyoxyalkylene polymers end-capped with mono- or bisaminobenzoate groups and compares them with standard low-mol.-weight tertiary amines.

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L18 ANSWER 7 OF 51 HCAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2005:686181 HCAPLUS Full-text  
 DOCUMENT NUMBER: 143:173572  
 TITLE: Piperazino photoinitiation sensitizers  
 INVENTOR(S): Herlihy, Shaun Lawrence; Rowatt, Brian  
 PATENT ASSIGNEE(S): Sun Chemical Limited, UK  
 SOURCE: Brit. UK Pat. Appl., 29 pp.  
 CODEN: BAXXDU  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
GB 2410499	A	20050803	GB 2004-1959	20040129
WO 2005073208	A1	20050811	WO 2005-US3505	20050128
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
EP 1709024	A1	20061011	EP 2005-712815	20050128
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK, IS				
CN 1914185	A	20070214	CN 2005-80003572	20050128
PRIORITY APPLN. INFO.:			GB 2004-1959	A 20040129
			WO 2005-US3505	W 20050128

GI



AB Compds. of formula I (R1,R2 = terminal groups; X = groups of formula II or III where R3 = alkyl, aryl; Z = direct bond or alkylene group optionally bearing OH group or alkyl branching; Y = CO, CH2; Q = a residue of a dihydroxy compound; x = 1-100) are useful sensitizers for use with Type II photoinitiators in the formulation of printing inks and other energy curable coatings. Thus, reacting 4,4'-difluorobenzophenone with piperazine in the presence of K carbonate powder in dry DMSO at reflux temperature (.apprx.190°) gave a 4,4'-dipiperazinobenzophenone which was coupled with tripropylene glycol diacrylate using 1,8- diazabicyclo[5.4.0]undecene-7 catalyst to give a photosensitizer showing high curing power when incorporated in a photocurable ink composition based on a trifunctional urethane acrylate oligomer.

REFERENCE COUNT: 1 THERE ARE 1 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L18 ANSWER 8 OF 51 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2005:28335 HCAPLUS Full-text

DOCUMENT NUMBER: 142:116231

TITLE: Preparation of a low viscosity, hyperbranched polymer containing functional groups

INVENTOR(S): Illsley, Derek Ronald; Herlihy, Shaun Lawrence; Davidson, Robert Stephen

PATENT ASSIGNEE(S): Sun Chemical Limited, UK

SOURCE: Brit. UK Pat. Appl., 23 pp.

CODEN: BAXXDU

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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GB 2403722	A	20050112	GB 2003-16363	20030711
PRIORITY APPLN. INFO.:			GB 2003-16363	20030711

AB A hyperbranched functional polymer is prepared by reacting together: (a) a polyol; (b) a silicon compound of formula  $R_nSiY_p$ , where R represents an alkyl group, an alkenyl group, an aralkyl group, an aryl group, a polyalkylene oxide group or a poly(lactone) group; Y represents a halogen atom or a group of formula -OR1, wherein R1 represents an alkyl group; n is a number from 0 to 2; and p is a number from 2 to 4, where ; and (c) a functional monohydroxy compound of formula HO-X, where X is or includes the desired functional group or a precursor thereof which group will not itself participate in the reaction with (a) and (b). Such polymers may, despite their high mol. weight, have relatively low viscosities. Preferred compds. of formula HO-X include 3-ethyl-3-hydroxymethyloxetane, photoinitiators and surfactants. These hyperbranched polymers are particularly useful in the production of radiation or cationically curable surface coatings e.g. printing inks and varnishes. Thus, a polymer prepared from 36.8 g of poly(tetrahydrofuran) , 74.0 g of 3-ethyl-3- hydroxymethyloxetane, 40.0 g of trimethoxymethylsilane and 0.25 g of titanium isopropoxide at 90° for 2 h then 120° for another 3 h, with a viscosity of 2.0 P, is used in a cyan flexo ink formulation, which turns out to have better curing and isopropanol alc. resistance properties than the control sample (UVR 6110 as photoinitiator).

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L18 ANSWER 9 OF 51 HCAPLUS COPYRIGHT 2007 ACS on STN

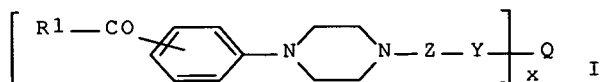
ACCESSION NUMBER: 2005:8311 HCAPLUS Full-text

DOCUMENT NUMBER: 142:116228

TITLE: Piperazine-based radiation curing sensitizers

INVENTOR(S): Davidson, Robert Stephen; Herlihy, Shaun  
 Lawrence; Rowatt, Brian  
 PATENT ASSIGNEE(S): Sun Chemical Limited, UK  
 SOURCE: Brit. UK Pat. Appl., 28 pp.  
 CODEN: BAXXDU  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
GB 2403478	A	20050105	GB 2003-15774	20030704
WO 2005007637	A1	20050127	WO 2004-US21370	20040702
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
EP 1660470	A1	20060531	EP 2004-777489	20040702
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK				
CN 1845912	A	20061011	CN 2004-80025346	20040702
PRIORITY APPLN. INFO.:			GB 2003-15774	A 20030704
			WO 2004-US21370	W 20040702
OTHER SOURCE(S):		MARPAT 142:116228		
GI				



AB A piperazine-based compound of formula I and esters thereof are useful as sensitizers for use in radiation-curable compns., wherein: R1 represents a Me group, an Et group, a C5 or C6 cycloalkyl group or a C6 - C10 aryl group, said aryl group being unsubstituted or being substituted by at least one C1 - C4 alkyl or alkoxy group; Z represents a C6 - C10 arylene group or a group of formula --(CHR4)n--, where R4 represents a hydrogen atom, a hydroxy group or a C1 - C4 alkyl group, and n is a number from 0 to 6; Y represents a carbonyl group or a --CH2-- group, provided that R4 represents a hydroxy group when Y represents a --CH2-- group; Q represents a residue of a mono- or poly-hydroxy compound having from 1 to 6 hydroxy groups; and x is a number from 1 to 6.

REFERENCE COUNT: 1 THERE ARE 1 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L18 ANSWER 10 OF 51 HCAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2004:668486 HCAPLUS Full-text  
 DOCUMENT NUMBER: 142:393846  
 TITLE: Multifunctional photoinitiators (MFPIs): a new concept



AUTHOR(S): Burrows, R.; Davidson, R. S.; Illsley, D. R.  
 CORPORATE SOURCE: Division of Sun Chemical, Coates Lorilleux, Orpington,  
 Kent, BR5 3PP, UK  
 SOURCE: Surface Coatings International, Part B: Coatings  
 Transactions (2004), 87(B2), 127-135  
 CODEN: SCIPDU; ISSN: 1476-4865  
 PUBLISHER: SURFEX Ltd.  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

AB The migration of unreacted photoinitiators and their byproducts from UV-cured printing inks and coatings is an increasing concern for food packaging applications. This paper describes the synthesis of novel multifunctional photoinitiators (MFPI) for use in UV curing, with the aim of decreasing the amount of extractable components present in a UV-cured coating. The activity of these MFPIs was investigated using differential photocalorimetry (DPC) and real-time IR spectroscopy (RTIR). These anal. techniques demonstrated that the increase in functionality and mol. weight of MFPIs did not affect the efficiency of the PI in initiating UV-curing polymerization reactions. The extraction studies and high-performance liquid chromatog. (HPLC) anal. demonstrated that the use of MFPI can bring about a considerable reduction in the amount of free PI extracted from the coating as the high functionality increased the likelihood of the PI being bound into the polymer coating.

REFERENCE COUNT: 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L18 ANSWER 11 OF 51 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2004:263787 HCAPLUS Full-text

DOCUMENT NUMBER: 140:288949

TITLE: Compositions comprising photoinitiator and oxetane compound for use in printing ink or varnish

INVENTOR(S): Addison, Glynn; Davidson, Robert Stephen; Illsley, Derek Ronald; Okuda, Tatsushi; Rehnberg, Nicola

PATENT ASSIGNEE(S): Coates Brothers Plc, UK

SOURCE: Brit. UK Pat. Appl., 26 pp.

CODEN: BAXXDU

DOCUMENT TYPE: Patent

LANGUAGE: English

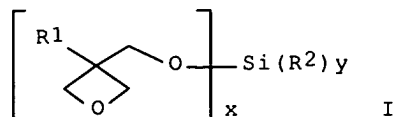
FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
GB 2393444	A	20040331	GB 2002-22323	20020925
PRIORITY APPLN. INFO.:			GB 2002-22323	20020925

OTHER SOURCE(S): MARPAT 140:288949

GI



AB An energy curable composition comprises a photoinitiator and a polymerizable compound I (R1 = C1-4 alkyl, aryl or an aralkyl group; R2 = OR3 or group R4; R3 = alkenyl, aryl, aralkyl, a polyalkylene oxide group or a polylactone

group; R4 = C1-20 alkyl, aryl or aralkyl; x = 1-4). Thus, 3-ethyl-3-hydroxymethyloxetane (0.18 mol) and triethylamine (0.18 mol) were stirred together in di-Et ether (250 mL) at 0-5° under N, MeSiCl<sub>3</sub> (0.06 mol) dissolved in di-Et ether (50 mL) was added dropwise over 1.5 h at 0-5°, after the end of the addition, stirring was continued at 0-5° for 30 min, and the temperature was increased to room temperature, Et<sub>3</sub>N.HCl precipitate was removed, the residue after solvent separation was a clear liquid and the yield was 0.05 mol (91.1wt%).

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L18 ANSWER 12 OF 51 HCAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2003:319858 HCAPLUS Full-text  
 DOCUMENT NUMBER: 138:339759  
 TITLE: Multifunctional benzophenone photoinitiators  
 INVENTOR(S): Burrows, Roger Edward; Davidson, Robert  
 Stephen; Herlihy, Shaun Lawrence  
 PATENT ASSIGNEE(S): Coates Brothers PLC, UK  
 SOURCE: PCT Int. Appl., 31 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003033452	A1	20030424	WO 2002-GB4329	20020924
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW			
RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
EP 1438282	A1	20040721	EP 2002-765044	20020924
R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK			
JP 2005505615	T	20050224	JP 2003-536194	20020924
CN 1599713	A	20050323	CN 2002-824160	20020924
US 2005037277	A1	20050217	US 2004-492469	20041015
US 7166647	B2	20070123		

PRIORITY APPLN. INFO.: GB 2001-25099 A 20011018  
 WO 2002-GB4329 W 20020924

OTHER SOURCE(S): MARPAT 138:339759

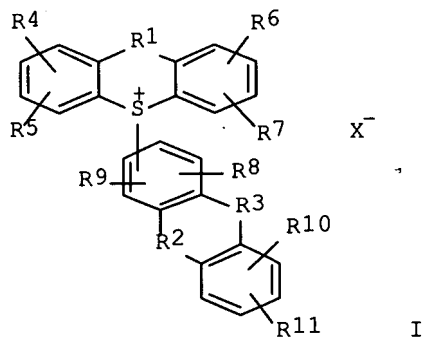
AB Compds. [PhCO-p-C<sub>6</sub>H<sub>4</sub>O(CHR<sub>3</sub>)<sub>n</sub>COA]xQ [R<sub>3</sub> = H, Et, Me; n = 1-6; A = [O(CHR<sub>2</sub>CHR<sub>1</sub>)a]y, [O(CH<sub>2</sub>)bCO]y, [O(CH<sub>2</sub>)bCO](y-1)[O(CHR<sub>2</sub>CHR<sub>1</sub>)a]; where one of R<sub>1</sub> and R<sub>2</sub> is H and the other is H, Me or Et; a = 1-2; b = 4-5; y = 1-10; Q = residue of a polyhydroxy compound having 2-6 OH groups; x is greater than 1 but no greater than the number of available OH groups in Q] and esters thereof are useful as photoinitiators for preparation of energy-curable compns., such as varnishes and printing inks. Thus, reacting 0.7 mol 4-carboxymethoxybenzophenone with 0.35 mol polytetrahydrofuran (average mol. weight 250) gave a photoinitiator showing good cure speed and low migration.

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L18 ANSWER 13 OF 51 HCAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2003:22871 HCAPLUS Full-text  
 DOCUMENT NUMBER: 138:91475  
 TITLE: Fused aromatic sulfonium salts for use as  
 photoinitiators for radiation-curable  
 compositions  
 INVENTOR(S): Davidson, Robert Stephen; Pratt, Joanna  
 PATENT ASSIGNEE(S): Coates Brothers PLC, UK  
 SOURCE: PCT Int. Appl., 36 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003002557	A1	20030109	WO 2002-GB2397	20020523
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
PRIORITY APPLN. INFO.:			GB 2001-15588	A 20010626

OTHER SOURCE(S): MARPAT 138:91475  
 GI



AB Asym. compds. I [R1, R2 and R3 = direct bond, O, >CH2, a S atom, >C=O or (CH2)2; R4, R5, R6, R7, R8, R9, R10 and R11 = H, alkyl, alkoxy or alkenyl group, a halogen, nitro, nitrile, hydroxyl, aryl, an aralkyl or aralkyloxy, aryloxy, arylalkenyl, cycloalkyl, carboxy, alkoxy carbonyl or alkyl carbonyloxy, aryloxy carbonyl, alkanesulfonyl, arenesulfonyl, alkanoyl group or an aryl carbonyl; X- represents an anion, where the fused ring systems are different from each other] are useful as cationic photoinitiators for use in radiation-curable coating compns., printing inks and varnishes, and have the advantage that they are relatively odor-free on curing. Thus, catalyst formed by the electrophilic substitution of dibenzothiophene and thianthrene

sulfoxide was used to cure UV cyan ink formulation containing UVR 6110 vehicle and the image had MEK rubs 7 and 19, after 1 wk.

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L18 ANSWER 14 OF 51 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2001:859825 HCAPLUS Full-text

DOCUMENT NUMBER: 136:184139

TITLE: Radiation curing

AUTHOR(S): Davidson, R. S.

CORPORATE SOURCE: DavRad Services, UK

SOURCE: Rapra Review Reports (2001), 12(4), 1, 1-34

CODEN: RRVREQ; ISSN: 0889-3144

PUBLISHER: Rapra Technology Ltd.

DOCUMENT TYPE: Journal; General Review

LANGUAGE: English

AB A review. The following topics are considered: the chemical process used in radiation curing of polymeric materials (radicals, carbocations, and carbanions); equipment (curable coatings and radiation sources); general formulations (photoinitiators, prepolymers, reactive diluents, pigments, and additives); components of cationically cured formulations other than photoinitiators (reactive diluents, prepolymers, combinations of cationic- and radical-cured materials); applications of radiation curing (wood coating, graphic arts, printing inks, packaging, adhesives, optical components and optoelectronic applications, composites, rapid prototyping, nanotechnol. and microstructures, liquid crystals, electronics, powder coatings, and coatings for outdoor use); water-based formulations; water resistance, permeability, and hydrogels; and vulcanization.

REFERENCE COUNT: 114 THERE ARE 114 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L18 ANSWER 15 OF 51 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2001:662180 HCAPLUS Full-text

DOCUMENT NUMBER: 135:359156

TITLE: Radiation curable materials designed to aid de-inking

AUTHOR(S): Andrews, Mark; Davidson, R. Stephen

CORPORATE SOURCE: School of Physical Sciences, University of Kent at Canterbury, Canterbury, CT2 7NH, UK

SOURCE: Polymer Preprints (American Chemical Society, Division of Polymer Chemistry) (2001), 42(2), 791-792

CODEN: ACPPAY; ISSN: 0032-3934

PUBLISHER: American Chemical Society, Division of Polymer Chemistry

DOCUMENT TYPE: Journal; (computer optical disk)

LANGUAGE: English

AB New radiation curable materials have been produced which are designed to aid the removal of surface coatings from substrates such as paper at the recycling stage. Disulfide groups have been incorporated into acrylates. These new acrylates were polymerized in the presence of a photoinitiator and UV light to give coatings, which can be removed under mild conditions which are compatible with the waste paper recycling process.

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L18 ANSWER 16 OF 51 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2001:642359 HCAPLUS Full-text

TITLE: Radiation curable materials designed to aid de-inking

AUTHOR(S): Davidson, R. Stephen; Andrews, Mark;

Illsley, Derek R.

CORPORATE SOURCE: School of Physical Sciences, University of Kent at  
Canterbury, Canterbury, CT2 7NH, UK  
SOURCE: Abstracts of Papers, 222nd ACS National Meeting,  
Chicago, IL, United States, August 26-30, 2001 (2001),  
POLY-489. American Chemical Society: Washington, D.  
C.  
CODEN: 69BUZP  
DOCUMENT TYPE: Conference; Meeting Abstract  
LANGUAGE: English  
AB New radiation curable materials have been produced which are designed to aid  
the removal of surface coatings from substrates such as paper at the re-  
cycling stage. Disulfide groups have been incorporated into acrylates. These  
new acrylates polymerize in the presence of a photoinitiator and UV light to  
give coatings, which can be removed under mild conditions which are compatible  
with the waste paper recycling process.

L18 ANSWER 17 OF 51 HCAPLUS COPYRIGHT 2007 ACS on STN  
ACCESSION NUMBER: 1998:751828 HCAPLUS Full-text  
DOCUMENT NUMBER: 130:168706  
TITLE: The application of some polymeric type-I  
photoinitiators based on  $\alpha$ -  
hydroxymethylbenzoin and  $\alpha$ -hydroxymethylbenzoin  
methyl ether  
AUTHOR(S): Davidson, R. Stephen; Hageman, Hendrik J.;  
Lewis, Sandralee P.  
CORPORATE SOURCE: The Chemical Laboratory, The University of Kent,  
Canterbury, CT2 7NH, UK  
SOURCE: Journal of Photochemistry and Photobiology, A:  
Chemistry (1998), 118(3), 183-188  
CODEN: JPPCEJ; ISSN: 1010-6030  
PUBLISHER: Elsevier Science S.A.  
DOCUMENT TYPE: Journal  
LANGUAGE: English  
AB Some polymeric photoinitiators based on  $\alpha$ - hydroxymethylbenzoin and its Me  
ether are used to initiate the polymerization of Me methacrylate in solution  
and the crosslinking of an epoxyacrylate formulation in thin films. In  
general the polymeric photoinitiators perform better than corresponding low  
mol. weight model compds. Moreover, it is found that polymeric  
photoinitiators based on  $\alpha$ -hydroxymethylbenzoin Me ether perform better than  
those based on  $\alpha$ -hydroxymethylbenzoin. Explanations for these observations are  
advanced.  
REFERENCE COUNT: 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS  
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L18 ANSWER 18 OF 51 HCAPLUS COPYRIGHT 2007 ACS on STN  
ACCESSION NUMBER: 1998:564056 HCAPLUS Full-text  
DOCUMENT NUMBER: 129:296010  
TITLE: The synthesis and characterization of some polymeric  
Type-1 photoinitiators based on  
 $\alpha$ -hydroxymethylbenzoin and  $\alpha$ -  
hydroxymethylbenzoin methyl ether  
AUTHOR(S): Davidson, R. Stephen; Hageman, Hendrik J.;  
Lewis, Sandralee P.  
CORPORATE SOURCE: The Chem. Lab., The Univ. Kent, Canterbury, CT2 7NH,  
UK  
SOURCE: Journal of Photochemistry and Photobiology, A:  
Chemistry (1998), 116(3), 257-263  
CODEN: JPPCEJ; ISSN: 1010-6030

PUBLISHER: Elsevier Science S.A.  
DOCUMENT TYPE: Journal  
LANGUAGE: English

AB The acrylic and methacrylic esters of  $\alpha$ -hydroxymethylbenzoin and  $\alpha$ -hydroxymethylbenzoin Me ether, resp., are synthesized and thermally copolymerized with Me acrylate and Me methacrylate using a chain transfer agent in some cases to control the mol. weight of the copolymers. The products are characterized by <sup>1</sup>H NMR spectroscopy and UV-absorption spectroscopy. Certain copolymers exhibited hyperchromism. The photodecomposition of the copolymers in the presence of suitable radical trapping agents shows their potential as photoinitiators.

REFERENCE COUNT: 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L18 ANSWER 19 OF 51 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1998:419187 HCAPLUS Full-text

DOCUMENT NUMBER: 129:176008

TITLE: Some new amine synergists and photoinitiators

AUTHOR(S): Anderson, David G.; Cullum, Neil R.; Davidson, R. Stephen

CORPORATE SOURCE: Lambson Fine Chemicals Ltd., Castleford, WF10 1LU, UK

SOURCE: RadTech'98 North America UV/EB Conference Proceedings, Chicago, Apr. 19-22, 1998 (1998), 457-467. RadTech International North America: Northbrook, Ill.

CODEN: 66IXAN

DOCUMENT TYPE: Conference

LANGUAGE: English

AB A range of new amine synergists and Type II initiators has been synthesized which contain poly(ethyleneoxy) groups. The performance of these compounds was assessed using RTIR spectroscopy, using them to initiate the cure of hexane-1,6-diol diacrylate in a UV curing tunnel, followed by a determination of the extent of cure by IR spectroscopy, and subjecting cured films to extraction with an acetonitrile-water mixture followed by an analysis of the extractables by liquid chromatography, in order to assess the level of extractable initiator and synergist and their photoproducts in the films. The introduction of polyethylene glycol (PEG) into the synergists and initiators gave materials exhibiting high reactivity and dramatically reduced the migration of these compounds and their reaction products in cured films. A liquid Type I initiator having an appended PEG chain was also synthesized and this material exhibited excellent reactivity and little tendency to migrate in cured films.

REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L18 ANSWER 20 OF 51 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1998:42367 HCAPLUS Full-text

DOCUMENT NUMBER: 128:102923

TITLE: Polyalkylene glycol derivatives, their preparation and use as photoinitiators

INVENTOR(S): Anderson, David George; Davidson, Robert Stephen; Cullum, Neil Richard

PATENT ASSIGNEE(S): Lambson Fine Chemicals Ltd., UK; Anderson, David George; Davidson, Robert Stephen; Cullum, Neil Richard

SOURCE: PCT Int. Appl., 59 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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AB A multifunctional photoinitiator, useful for curing films and polymerizing monomers, is obtainable as the reaction product of a multifunctional core material containing  $\geq 2$  reactive groups and a photoinitiator or a derivative thereof. The photoinitiator or its derivative has a reactive group capable of reacting with the reactive groups of the multifunctional core. A typical photoinitiator was manufactured by reaction of 2 g 4-(2-acryloyloxyethoxy)phenyl 2-hydroxy-2-Pr ketone with 0.38 g N,N'-dimethylethylenediamine.

L18 ANSWER 22 OF 51 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1997:41121 HCAPLUS Full-text  
DOCUMENT NUMBER: 126:192802  
TITLE: Photoinitiated polymerization reactions:  
application of a new real-time FTIR system for  
following the rate of polymerization  
AUTHOR(S): Bradley, G.; Davidson, R. S.; Howgate, G.  
J.; Mouillat, C. G. J.; Turner, P. J.  
CORPORATE SOURCE: The Chemical Laboratory, University of Kent,  
Canterbury, CT2 7NH, UK  
SOURCE: Journal of Photochemistry and Photobiology, A:  
Chemistry (1996), 100(1-3), 109-118  
CODEN: JPPCEJ; ISSN: 1010-6030  
PUBLISHER: Elsevier  
DOCUMENT TYPE: Journal  
LANGUAGE: English

AB During the development of a technique whereby the progress of cure in a photoinitiated polymerization reaction can be monitored by IR spectroscopy, a Fourier transform IR (FTIR) microscope was adapted to enable curing to be carried out on the microscope stage. Preliminary results are reported illustrating the effectiveness of the development for the observation of polymerization in acrylate, dioxolane and polymerizable liquid crystal systems.

REFERENCE COUNT: 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

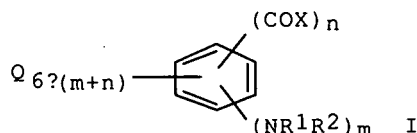
L18 ANSWER 23 OF 51 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1997:97 HCAPLUS Full-text  
DOCUMENT NUMBER: 126:31793  
TITLE: Polyalkylene polyol esters of dialkylaminobenzoic  
acids and their use as migration-resistant curing  
agents in photoinitiated polymerization  
processes  
INVENTOR(S): Anderson, David George; Davidson, Robert  
Stephen; Cullum, Neil Richard; Sands, Elizabeth  
PATENT ASSIGNEE(S): Lambson Fine Chemicals Limited, UK; Anderson, David  
George; Davidson, Robert Stephen; Cullum, Neil  
Richard; Sands, Elizabeth  
SOURCE: PCT Int. Appl., 43 pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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WO 9633157	A1	19961024	WO 1996-GB910	19960417
W: CA, JP, MX, US				
RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				



CA 2221633	A1	19961024	CA 1996-2221633	19960417
EP 822929	A1	19980211	EP 1996-910085	19960417
EP 822929	B1	20030326		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, NL, SE, PT, FI				
AT 235458	T	20030415	AT 1996-910085	19960417
US 5905164	A	19990518	US 1998-930581	19980227
PRIORITY APPLN. INFO.:			GB 1995-7808	A 19950418
			WO 1996-GB910	W 19960417
OTHER SOURCE(S):	MARPAT 126:31793			
GI				



AB The amine compds. consist of I [ $R_1, R_2$  = alkyl; X = polylyalkylene polyol moiety (hydroxyl groups of the polyol moiety are optionally alkylated); Q = H, halogen, alkyl, acyl, nitro, cyano, alkoxy, hydroxy, amino, alkylamino, sulfinyl, alkylsulfinyl, sulfonyl, alkylsulfonyl, sulfonate, amido, alkylamido, alkoxycarbonyl, halocarbonyl, haloalkyl; m, n = 1-3]. The polymerizable materials are suitable for surface coatings and printing inks (no data). Thus, 3.38 polyethylene glycol monomethyl ether was treated with 2.0 g 4-dimethylaminobenzoyl chloride to give polyethylene glycol 4-(N,N-dimethylamino)benzoyl monomethyl ether (II). A composition containing 1,6-hexanediol acrylate 93, II 5, and isopropylthioxanthone 2% was exposed to UV rays to give a cured polymer exhibiting polymerization rate 75° as measured by the real time IR spectroscopy and II migration amount 0% as measured by the high-pressure liquid chromatog.

L18 ANSWER 24 OF 51 HCAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1996:743688 HCAPLUS Full-text  
 DOCUMENT NUMBER: 126:8803  
 TITLE: Benzophenone derivatives containing polyoxyalkylene groups for use as photoinitiators  
 INVENTOR(S): Anderson, David George; Davidson, Robert  
 Stephen; Cullum, Neil Richard; Sands, Elizabeth  
 PATENT ASSIGNEE(S): Lambson Fine Chemicals Limited, UK  
 SOURCE: PCT Int. Appl., 35 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9633156	A1	19961024	WO 1996-GB911	19960417
W: CA, JP, MX, US				
RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
CA 2221599	A1	19961024	CA 1996-2221599	19960417
EP 822928	A1	19980211	EP 1996-910086	19960417
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, NL, SE, PT, FI				
PRIORITY APPLN. INFO.:			GB 1995-7811	A 19950418

OTHER SOURCE(S): MARPAT 126:8803

AB Benzophenone derivs. such as RCO-p-C<sub>6</sub>H<sub>4</sub>COPh, (RCO-p-C<sub>6</sub>H<sub>4</sub>)<sub>2</sub>CO, and RCO-o-C<sub>6</sub>H<sub>4</sub>COPh [R = MeO(CH<sub>2</sub>CH<sub>2</sub>O)<sub>3</sub>50] are useful as photoinitiators (e.g., for polymerization of acrylates) which show good resistance to migration from cured resins (e.g., into foods in contact with the resins).

L18 ANSWER 25 OF 51 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1996:458363 HCAPLUS Full-text

DOCUMENT NUMBER: 125:117422

TITLE: An approach for comparing the efficiency of photoinitiators

AUTHOR(S): Anderson, D. G.; Elvery, J.; Davidson, R. S.

CORPORATE SOURCE: Switz.

SOURCE: RadTech Europe 95 Conference Proceedings, Maastricht, Neth., Sept. 25-27, 1995 (1995), 565-573. RadTech Europe: Fribourg, Switz.

CODEN: 63BHAL

DOCUMENT TYPE: Conference

LANGUAGE: English

AB The effectiveness of 2,4-diethylthioxanthone (DETX) and isopropylthioxanthone as a photoinitiator for radical polymerization was compared.

L18 ANSWER 26 OF 51 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1996:381317 HCAPLUS Full-text

DOCUMENT NUMBER: 125:115220

TITLE: Thioxanthenes: their fate when used as photoinitiators

AUTHOR(S): Anderson, David G.; Davidson, R. Stephen; Elvery, Jason J.

CORPORATE SOURCE: Lambson Fine Chem. Ltd., Castleford, WF10 1LU, UK

SOURCE: Polymer (1996), 37(12), 2477-2484

CODEN: POLMAG; ISSN: 0032-3861

PUBLISHER: Elsevier

DOCUMENT TYPE: Journal

LANGUAGE: English

AB When thioxanthenes are used in conjunction with an amine synergist, they initiate the polymerization of lauryl acrylate. Gel permeation chromatog. showed that the polymer contains thioxanthone residues. The thioxanthyl ketyl radical acts as a chain terminator, with reactions occurring at the 2-, 4-, 5-, 7-, and 9-positions. Reactions at positions other than 9 can lead to incorporation of thioxanthone residues. When the aromatic amine synergist, Et p-(dimethylamino)benzoate, is used, it is also incorporated into the polymer.

L18 ANSWER 27 OF 51 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1996:81984 HCAPLUS Full-text

DOCUMENT NUMBER: 124:204978

TITLE: An appraisal of 2,4-diethylthioxanthone as a photoinitiator

AUTHOR(S): Anderson, D G.; Davidson, R S.; Elvery, J J.

CORPORATE SOURCE: Lambson Fine Chemicals Ltd, Castleford, WF10 1LU, UK

SOURCE: Surface Coatings International (1995), 78(11), 482-5

CODEN: SCOIE6; ISSN: 1356-0751

PUBLISHER: Oil and Colour Chemists' Association

DOCUMENT TYPE: Journal

LANGUAGE: English

AB 2,4-Diethylthioxanthone was compared with isopropylthioxanthone as a photoinitiator in the polymerization and curing of acrylate coatings.

L18 ANSWER 28 OF 51 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1995:1004645 HCAPLUS Full-text

DOCUMENT NUMBER: 124:56807

TITLE: Some aspects of the role of amines in the photoinitiated polymerization of acrylates in the presence and absence of oxygen

AUTHOR(S): Bradley, Grant; Davidson, R. Stephen

CORPORATE SOURCE: The Chemical Laboratory, The University of Kent, Canterbury, CT2 7NH, UK

SOURCE: Recueil des Travaux Chimiques des Pays-Bas (1995), 114(11/12), 528-33

CODEN: RTCPA3; ISSN: 0165-0513

PUBLISHER: Elsevier

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Triethanolamine (1), methyldiethanolamine (2) and dimethylethanolamine (3) are used in conjunction with the 2-(2-chlorophenyl)-4,5-diphenylimidazolyl radical and triplet benzophenone to initiate the polymerization of lauryl acrylate. The radical abstrs. a hydrogen atom from the amine to generate an  $\alpha$ -aminoalkyl radical. Hydrogen-atom abstraction occurs rather than electron followed by proton transfer, which is confirmed from the order of reactivity of the amines towards the lophyl (triarylimidazolyl) radical i.e.  $2 \gg 1 > 3$ . The imidazolyl radicals abstract hydrogen from thiols in a similar fashion more effectively to give thiyl radicals which initiate polymerization of the acrylate. The effectiveness of the amines to reduce oxygen inhibition is  $1 < 3 < 2$ . The ability of the amines to act as synergists in the polymerization of thin films of lauryl acrylate initiated by lophyl radicals and triplet benzophenone is assessed. The efficiency of the amines is 2 .apprx.  $1 > 3$  for reaction with lophyl radicals whereas with triplet benzophenone the three amines gave similar amts. of polymer. For amines 2 and 3, two types of amino alkyl radical can be generated. Radicals of type  $>N.ovrhdot.CHCH_2OH$  are more effective initiators than  $C.ovrhdot.H_2N<$ .

L18 ANSWER 29 OF 51 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1995:870445 HCAPLUS Full-text

DOCUMENT NUMBER: 124:9939

TITLE: Polymerizable and resultant polymeric benzil derivatives as novel photoinitiating systems

AUTHOR(S): Davidson, R Stephen; Hageman, Hendrik; Lewis, Sandy

CORPORATE SOURCE: PRA, Teddington/Middlesex, TW11 8LD, UK

SOURCE: Aspects of Photoinitiation: Radcure Coatings and Inks -- Egham, UK, Oct. 19-20, 1993 (1993), Meeting Date 1993, 135, 137-47. Paint Research Association: Teddington, UK.

CODEN: 61TAA8

DOCUMENT TYPE: Conference

LANGUAGE: English

AB A number of monomeric benzil derivs. were prepared and were evaluated as initiators of the photopolymn. of acrylic monomers. Selected derivs. were advanced to provide polymeric systems, in which the benzil moiety was an integral part of the polymer backbone. These were also evaluated as potential photoinitiators and were compared with their parent monomers. The relative efficiencies of the novel monomeric and polymeric photoinitiators are discussed in terms of steric factors and the nature of the ring substituents.

L18 ANSWER 30 OF 51 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1995:870444 HCAPLUS Full-text

DOCUMENT NUMBER: 124:10924

TITLE: A new series of type II (benzophenone) polymeric photoinitiators

AUTHOR(S): Davidson, R Stephen; Dias, Aylvin A.; Illsley, Derek I.

CORPORATE SOURCE: University Chemical Laboratory, University Kent, Canterbury/Kent, CT2 7NH, UK

SOURCE: Aspects of Photoinitiation: Radcure Coatings and Inks -- Egham, UK, Oct. 19-20, 1993 (1993), Meeting Date 1993, 113, 115-33. Paint Research Association: Teddington, UK.  
CODEN: 61TAA8

DOCUMENT TYPE: Conference

LANGUAGE: English

AB Benzophenone photoinitiator was incorporated into polymer backbone by polymerizing benzophenone tetracarboxylic dianhydrides with a series of amine-terminated polyoxyalkylenes (Jeffamines) to yield benzophenone-containing polyimides. Those initiators were tested in the photocuring of epoxy novolak acrylate coating compns.

L18 ANSWER 31 OF 51 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1995:870443 HCAPLUS Full-text

DOCUMENT NUMBER: 123:341043

TITLE: Polymeric free radical photoinitiators

AUTHOR(S): Davidson, R Stephen

CORPORATE SOURCE: University Chemical Laboratory, University Kent, Canterbury/Kent, CT2 7NH, UK

SOURCE: Aspects of Photoinitiation: Radcure Coatings and Inks -- Egham, UK, Oct. 19-20, 1993 (1993), Meeting Date 1993, 97, 99-111. Paint Research Association: Teddington, UK.  
CODEN: 61TAA8

DOCUMENT TYPE: Conference

LANGUAGE: English

AB The preparation and properties of polymeric radical photoinitiators containing both terminal and pendant initiator groups are discussed.

L18 ANSWER 32 OF 51 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1995:187119 HCAPLUS Full-text

DOCUMENT NUMBER: 123:44192

TITLE: Benzophenone polymeric photoinitiators

AUTHOR(S): Davidson, R. Stephen; Dias, Aylvin A.; Illsley, Derek I.

CORPORATE SOURCE: UK

SOURCE: European Coatings Journal (1994), (4), 193-6, 198-201  
CODEN: ECJOEF; ISSN: 0930-3847

PUBLISHER: Vincentz

DOCUMENT TYPE: Journal

LANGUAGE: English/French

AB UV-curing photoinitiators were incorporated to polymers by polycondensation of benzophenone tetracarboxylic dianhydride systems with poly(ether diamine)s. The polyimides were evaluated as photoinitiators for epoxy novolac acrylate and glycerol propoxylated triacrylate, as model of industrial photo-imaging formulations. The curing process parameters are outlined.

L18 ANSWER 33 OF 51 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1994:510422 HCAPLUS Full-text

DOCUMENT NUMBER: 121:110422

TITLE: Some new developments in radiation curing

AUTHOR(S): Arsu, N.; Bowser, R.; Davidson, R. S.; Kahn, N.; Moran, P. M.; Rhodes, C. J.

CORPORATE SOURCE: Dep. Chem., City Univ., London, EC1V 0HB, UK

SOURCE: Special Publication - Royal Society of Chemistry (1993), 125(Photochemistry and Polymeric Systems), 15-31

CODEN: SROCDO; ISSN: 0260-6291

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The pros and cons of using allyl/benzylsilanes and stannanes, quinoxalines, and some Fe-arene complexes as free radical initiators are considered. The chemical of the Type I photoinitiator 1-(4-methylthiophenyl)-2-methyl-2-(N-morpholino)propan-1-one is discussed.

L18 ANSWER 34 OF 51 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1994:192373 HCAPLUS Full-text

DOCUMENT NUMBER: 120:192373

TITLE: New cleavage photoinitiators for radical polymerization. 2. Synthesis and photochemical study of dihydroxy derivatives of dibenzoylmethane

AUTHOR(S): Bosch, P.; del Monte, F.; Mateo, J. L.; Davidson, R. S.

CORPORATE SOURCE: Instituto de Ciencia y Tecnologia de Polimeros, CSIC, Juan de la Cierva 3, Madrid, 28006, Spain

SOURCE: Journal of Photochemistry and Photobiology, A: Chemistry (1994), 78(1), 79-84

CODEN: JPPCEJ; ISSN: 1010-6030

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Dihydroxy derivs. of para-substituted dibenzoylmethanes were prepared. On continuous irradiation, these compds. undergo homolytic fragmentation in the position  $\alpha$  to the CO group. A fragmentation mechanism is presented. The quantum yields of chromophore destruction are high and are indicative of high rates of radical production. A photocalorimetric and real time IR (RTIR) study of the radical polymerization of acrylic monomers shows that these compds. are excellent photoinitiators.

L18 ANSWER 35 OF 51 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1994:107840 HCAPLUS Full-text

DOCUMENT NUMBER: 120:107840

TITLE: Iron-arene complexes as free radical and cationic photoinitiators

AUTHOR(S): Bowser, Richard; Davidson, R. Stephen

CORPORATE SOURCE: Department of Chemistry, City University, London, EC1V 0HB, UK

SOURCE: Journal of Photochemistry and Photobiology, A: Chemistry (1994), 77(2-3), 269-76

CODEN: JPPCEJ; ISSN: 1010-6030

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Evidence is presented that iron (II)-arene complexes can initiate free radical polymerization reactions with low efficiency. Oxygen appears to play a pos.

role; probably by oxidizing the iron (II) to an iron (III) species. Cationic curing of an epoxide by an iron-arene complex was monitored by photodifferential scanning calorimetry and again oxygen played a pos. role. The finding that a decomposition product of  $\eta^6$ -thioxanthene- $\eta^5$ -cyclopentadienyliron hexafluorophosphate is thioxanth-9-one suggests that peroxy radicals are produced during reaction.

L18 ANSWER 36 OF 51 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1993:591708 HCAPLUS Full-text

DOCUMENT NUMBER: 119:191708

TITLE: The chemistry of photoinitiators - some recent developments

AUTHOR(S): Davidson, R. S.

CORPORATE SOURCE: University of Kent at Canterbury, Dept. of Chemistry, Canterbury Kent, CT2 7NH, UK

SOURCE: Journal of Photochemistry and Photobiology, A: Chemistry (1993), 73(2), 81-96  
CODEN: JPPCEJ; ISSN: 1010-6030

DOCUMENT TYPE: Journal; General Review

LANGUAGE: English

AB Developments since 1987, of photoinitiators for curing pigmented films, photoinitiators which respond to visible radiation (from cw lasers), water compatible and cationic photoinitiators are reviewed. Mechanistic aspects of these reactions are discussed. Some new types of photoinitiators which have been introduced e.g. anionic photoinitiators, bifunctional photoinitiators and those containing peresters are also described. A review with 149 refs.

L18 ANSWER 37 OF 51 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1993:560877 HCAPLUS Full-text

DOCUMENT NUMBER: 119:160877

TITLE: New cleavage photoinitiators for radical polymerization: synthesis and photochemical study of dibromo derivatives of dibenzoylmethane

AUTHOR(S): Bosch, P.; del Monte, F.; Mateo, J. L.; Davidson, R. S.

CORPORATE SOURCE: Instituto de Ciencia y Tecnologia de Polimeros, CSIC, Juan de la Cierva 3, Madrid, 28006, Spain

SOURCE: Journal of Photochemistry and Photobiology, A: Chemistry (1993), 73(3), 197-204  
CODEN: JPPCEJ; ISSN: 1010-6030

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The p-substituted dibenzoyldibromomethane derivs. are prepared and investigated as photoinitiators for acrylates. Elucidation of the fragmentation mechanism on continuous irradiation indicates that there is homolytic fragmentation of the C-Br bond. The quantum yields for chromophore destruction are high and are indicative of high rates of radical production. A photocalorimetric and real time IR study of radical polymerization of lauryl acrylate confirms that these compds. are excellent photoinitiators, the Br radical being the initiating species.

L18 ANSWER 38 OF 51 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1992:634608 HCAPLUS Full-text

DOCUMENT NUMBER: 117:234608

TITLE: Some new developments in radiation curing

AUTHOR(S): Allen, K. W.; Cockburn, E. S.; Davidson, R. S.; Tranter, K. S.; Zhang, H. S.

CORPORATE SOURCE: Dep. Chem., City Univ., London, EC1V OHB, UK  
SOURCE: Pure and Applied Chemistry (1992), 64(9), 1225-30  
CODEN: PACHAS; ISSN: 0033-4545  
DOCUMENT TYPE: Journal  
LANGUAGE: English

AB Decomposition of cationic photoinitiators in the solid state is used in a remote cure process i.e. one in which photoinitiator is not present in the polymerizable monomer. An application of this process to a dual cure system is described. Details are given of free radical polymerization reactions of ethylhexyl acrylate in aqueous solns. which produce latexes via both suspension and emulsion polymerization processes. Ways of improving the photosensitivity of poly(vinyl alc.) modified with styrylpyridinium groups utilizing mixed [2+2]cycloaddn. reactions are reviewed.

L18 ANSWER 39 OF 51 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1992:532947 HCAPLUS Full-text

DOCUMENT NUMBER: 117:132947

TITLE: The photopolymerization of acrylates and methacrylates containing silicon

AUTHOR(S): Davidson, R. Stephen; Ellis, Richard; Tudor, Stephen; Wilkinson, Susan A.

CORPORATE SOURCE: Dep. Chem., City Univ., London, EC1V OHB, UK

SOURCE: Polymer (1992), 33(14), 3031-6

CODEN: POLMAG; ISSN: 0032-3861

DOCUMENT TYPE: Journal

LANGUAGE: English

AB A number of di- and triacrylates and methacrylates containing Si were prepared In the presence of a photoinitiator and absence of a tertiary amine, these compds. photopolymd. to give thin films, and in some cases without accompanying shrinkage. The rate of polymerization, as judged by the amount of exposure to give tack-free coatings, was usually much greater than that of standard diluents, such as hexanediol diacrylate, tripropylene glycol diacrylate, and trimethylolpropane triacrylate. Monitoring the degree of cure by quantifying the extent to which the acrylate or methacrylate groups were utilized showed that the presence of Si affected the extent to which double-bond utilization occurs.

L18 ANSWER 40 OF 51 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1991:644039 HCAPLUS Full-text

DOCUMENT NUMBER: 115:244039

TITLE: Photopolymerization processes

INVENTOR(S): Davidson, Robert Stephen; Wilkinson, Susan Anne

PATENT ASSIGNEE(S): National Research Development Corp., UK

SOURCE: Eur. Pat. Appl., 9 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 397518	A2	19901114	EP 1990-305100	19900511
EP 397518	A3	19911127		
R: BE, CH, DE, FR, GB, IT, LI, NL, SE				
US 5116876	A	19920526	US 1990-520222	19900503
GB 2235199	A	19910227	GB 1990-10560	19900511

GB 2235199 B 19921125  
JP 03054202 A 19910308 JP 1990-123961 19900514  
PRIORITY APPLN. INFO.: GB 1989-10921 A 19890512

AB Images are formed by photopolymerization of a layer of a cationically polymerizable resin, especially an epoxy resin, by placing it adjacent to but not in contact with a layer of a photoinitiator which is a salt wherein the anion has the general formula (MX<sub>n</sub>)<sup>(n-a)</sup> (X = halogen; n = an integer of 3-8; M = a Group III-V element; a = the valence of the element M). The preferred photoinitiator is a F compound such as a hexafluorophosphate or tetrafluoroborate salt. The photopolymerized resin layer thus obtained is free from contamination by the unreacted photoinitiator and the photopolymerization imaging process is especially suited for the fabrication of printed circuit boards.

L18 ANSWER 41 OF 51 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1991:218124 HCAPLUS Full-text  
DOCUMENT NUMBER: 114:218124  
TITLE: Photopolymerizable composition  
INVENTOR(S): Coyle, John David; Horton, Averil Myvanwy;  
Davidson, Robert Stephen; Bowser, Richard;  
Moran, Patricia Mary  
PATENT ASSIGNEE(S): Cookson Group PLC, UK  
SOURCE: Eur. Pat. Appl., 18 pp.  
CODEN: EPXXDW  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 389236	A2	19900926	EP 1990-302960	19900320
EP 389236	A3	19910206		

R: DE, FR, GB, IT

PRIORITY APPLN. INFO.: GB 1989-6470 A 19890321  
OTHER SOURCE(S): MARPAT 114:218124

AB A photopolymerizable composition is described comprising (a) a monomer, preferably acrylic; (b) ≥1 quinoxaline compound; and (c) ≥1 triazine derivative. A method of forming a photosensitive printing plate using the above composition is also described. The composition has high sensitivity.

L18 ANSWER 42 OF 51 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1989:192937 HCAPLUS Full-text  
DOCUMENT NUMBER: 110:192937  
TITLE: Oxidative desulfurization at pentacovalent phosphorus by photogenerated radicals  
AUTHOR(S): Baxter, Jane E.; Davidson, R. Stephen;  
Walker, Martin D.; Hageman, Hendrik J. H.  
CORPORATE SOURCE: Dep. Chem., City Univ., London, EC1V 0HB, UK  
SOURCE: Journal of Chemical Research, Synopses (1988), (5),  
164-5  
CODEN: JRPSDC; ISSN: 0308-2342  
DOCUMENT TYPE: Journal  
LANGUAGE: English  
OTHER SOURCE(S): CASREACT 110:192937

AB Acylphosphine oxides undergo photochem. Norrish type 1 cleavage process to give radicals which oxidatively desulfurize organophosphine sulfides to give the corresponding oxides. Thus, treatment of photoinitiators, RC(O)P(O)R<sub>12</sub>



(R = Ph, R1 = Me, Et; R = 2,4,6-Me3C6H2, 2,6-Me2C6H3, R1 = Ph), with Ph3PS, Ph2P(S)OEt, PhP(S)(OEt)2, and (EtO)3PS in MeCN in the presence of O gave the corresponding phosphine oxides. The irradiation time for these reaction was 10 h.

L18 ANSWER 43 OF 51 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1989:58161 HCAPLUS Full-text

DOCUMENT NUMBER: 110:58161

TITLE: Photoinitiators and photoinitiation

. 8. The photoinduced  $\alpha$ -cleavage of acylphosphine oxides: identification of the initiating radicals using a model substrate

AUTHOR(S): Baxter, Jane E.; Davidson, R. Stephen; Hageman, Hendrik J.; Overeem, Ton

CORPORATE SOURCE: Dep. Chem., City Univ., London, UK

SOURCE: Makromolekulare Chemie (1988), 189(12), 2769-80

CODEN: MACEAK; ISSN: 0025-116X

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The photodecompn. of diphenyl-2,4,6-trimethylbenzoylphosphine oxide (I) was studied both in solution at 40° and in thin films in the presence of 1,1-di-p-tolyethylene as a model substrate for vinyl monomers. Both primary radicals resulting from  $\alpha$ -cleavage of I were found to add to the olefinic double bond of the model substrate (initiation). The diphenylphosphinoyl radical was twice as effective as the 2,4,6-trimethylbenzoyl radical (II) under all conditions. O (air) considerably reduced the initiating efficiencies fp, in particular fp of II. The addition of NET3 partially restored the overall initiating efficiency in all likelihood by O-scavenging. A direct contribution of NET3-derived radicals to the initiation was not observed

L18 ANSWER 44 OF 51 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1988:631612 HCAPLUS Full-text

DOCUMENT NUMBER: 109:231612

TITLE: A study of the photodecomposition products of an acylphosphine oxide and 2,2-dimethoxy-2-phenylacetophenone

AUTHOR(S): Baxter, Jane E.; Davidson, R. Stephen; Hageman, Hendrik J.; Hakvoort, Gerard T. M.; Overeem, Ton

CORPORATE SOURCE: Dep. Chem., City Univ., London, EC1V 0HB, UK

SOURCE: Polymer (1988), 29(9), 1575-80

CODEN: POLMAG; ISSN: 0032-3861

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The photodecompn. of 2,4,6-trimethylbenzoyldiphenylphosphine oxide (I) and 2,2-dimethoxy-2-phenylacetophenone was investigated under normal UV curing conditions. The rate of formation and the identity of the many photodecompn. products produced by each photoinitiator were similar, whether amines (triethylamine or N-methyldiethanolamine) were present or not. Exptl. evidence indicates that the role of amines is predominantly one of oxygen scavenger. It was also established that the shelf-life of the photoinitiator I is short when present in an epoxydiacrylate/N-methyldiethanolamine UV-curable formulation. The decomposition products identified indicated that this is due to the occurrence of transesterification and hydrolysis reactions.

L18 ANSWER 45 OF 51 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1988:631611 HCAPLUS Full-text

DOCUMENT NUMBER: 109:231611  
TITLE: Use of acylphosphine oxides and acylphosphonates as photoinitiators  
AUTHOR(S): Baxter, Jane E.; Davidson, R. Stephen; Hageman, Hendrik J.  
CORPORATE SOURCE: Dep. Chem., City Univ., London, EC1V 0HB, UK  
SOURCE: Polymer (1988), 29(9), 1569-74  
CODEN: POLMAG; ISSN: 0032-3861  
DOCUMENT TYPE: Journal  
LANGUAGE: English  
AB Acylphosphine oxides are more efficient photoinitiators than acylphosphonates for the curing of acrylates and unsatd. polyesters; their efficiency is further increased by adding amines. The performance of these initiators is compared with two com. photoinitiators 2,2-dimethoxy-2-phenylacetophenone and benzoin Me ether. The acylphosphonates cannot be considered as useful photoinitiators for the production of surface coatings. The value of laser nephelometry as a method for screening photoinitiators is underscored. Some of the limitations of this method and that of bulk polymerization are assessed.

L18 ANSWER 46 OF 51 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1988:612399 HCAPLUS Full-text  
DOCUMENT NUMBER: 109:212399  
TITLE: The use of Fourier transform infrared spectroscopy to determine the photoinitiating efficiencies of acylphosphine oxides  
AUTHOR(S): Baxter, J. E.; Davidson, R. S.; De Boer, M. A. U.; Hageman, H. J.; Van Woerkom, P. C. M.  
CORPORATE SOURCE: Dep. Chem., City Univ., London, EC1V 0HB, UK  
SOURCE: European Polymer Journal (1988), 24(9), 819-24  
CODEN: EUPJAG; ISSN: 0014-3057  
DOCUMENT TYPE: Journal  
LANGUAGE: English

AB The efficiencies of 2,2-dimethoxy-2-phenylacetophenone (I) and 2,4,6-trimethylbenzoyldiphenylphosphine oxide (II) as photoinitiators for the crosslinking of a difunctional acrylate coating are compared in the presence and absence of tertiary amine. FTIR-attenuated total reflectance spectroscopy was used to measure the amount of unsatn. in the polymerized films shortly after their irradiation by UV light, and the degree of post-cure which occurred hours after the irradiation. In the presence of tertiary amines, the curing efficiency of I was superior to that II but not in the absence of amines.

L18 ANSWER 47 OF 51 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1988:612395 HCAPLUS Full-text  
DOCUMENT NUMBER: 109:212395  
TITLE: Acylphosphine oxides as photoinitiators for acrylate and unsaturated polyester resins  
AUTHOR(S): Baxter, Jane E.; Davidson, R. Stephen; Hageman, Hendrik J.  
CORPORATE SOURCE: Dep. Chem., City Univ. London, London, EC1V 0HB, UK  
SOURCE: European Polymer Journal (1988), 24(5), 419-24  
CODEN: EUPJAG; ISSN: 0014-3057  
DOCUMENT TYPE: Journal  
LANGUAGE: English

AB The photoinitiating efficiencies of 2,2-dimethoxy-2-phenylacetophenone and 2,4,6-trimethylbenzoyldiphenylphosphine oxide for the polymerization of nonpigmented epoxyacrylate and unsatd. polyester resins in thin films were

compared. In both formulations, it was necessary to add a tertiary amine to effect efficient cure and the photoinitiators appeared to initiate cure at similar speeds. Exptl. evidence was presented showing that the amines act as O scavengers. Contrary to earlier reports, there was no clear advantage in the use of acylphosphine oxides.

L18 ANSWER 48 OF 51 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1988:511439 HCAPLUS Full-text

DOCUMENT NUMBER: 109:111439

TITLE: Acylphosphine oxides as photoinitiators for a titanium dioxide-pigmented acrylic resin

AUTHOR(S): Baxter, Jane E.; Davidson, R. Stephen

CORPORATE SOURCE: Dep. Chem., City Univ., London, EC1V 0HB, UK

SOURCE: European Polymer Journal (1988), 24(6), 551-6  
CODEN: EUPJAG; ISSN: 0014-3057

DOCUMENT TYPE: Journal

LANGUAGE: English

AB A comparison was made between the photoinitiating efficiencies of 2-chlorothioxanthone and 2,4,6-trimethylbenzoyldiphenylphosphine oxide for the crosslinking of a pigmented (TiO<sub>2</sub>) epoxy-diacrylate resin in thin films containing an amine coinitiator. The photoinitiators initiated cure at similar speeds. Considering all the data, the use of acylphosphine oxides offers little advantage over more conventional photoinitiators for pigmented systems.

L18 ANSWER 49 OF 51 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1988:56217 HCAPLUS Full-text

DOCUMENT NUMBER: 108:56217

TITLE: Photoinitiators and photoinitiation

. 7. The photo-induced  $\alpha$ -cleavage of acylphosphine oxides: trapping of primary radicals by a stable nitroxyl

AUTHOR(S): Baxter, Jane E.; Davidson, R. Stephen;  
Hageman, Hendrik J.; Overeem, Ton

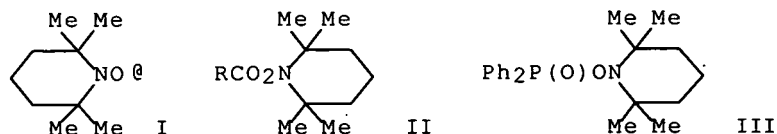
CORPORATE SOURCE: Dep. Chem., City Univ., London, UK

SOURCE: Makromolekulare Chemie, Rapid Communications (1987),  
8(6), 311-14  
CODEN: MCRCD4; ISSN: 0173-2803

DOCUMENT TYPE: Journal

LANGUAGE: English

GI



AB The photolysis of RCOP(O)Ph<sub>2</sub> (R = mesityl, 2,6-Ac<sub>2</sub>C<sub>6</sub>H<sub>3</sub>, Me<sub>3</sub>C) in the presence of nitroxide I gave the trapping products II and III; this is the first report of a nitroxide trapping of a P centered radical. The mechanism of the

solvent-independent photoinduced  $\alpha$ -cleavage of acylphosphine oxides, to give acyl and phosphinyl radicals, is discussed.

L18 ANSWER 50 OF 51 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1983:34980 HCAPLUS Full-text  
DOCUMENT NUMBER: 98:34980  
TITLE: The polymerization of acrylates using a combination of a carbonyl compound and an amine as a photoinitiator system  
AUTHOR(S): Davidson, R. S.; Goodin, J. W.  
CORPORATE SOURCE: Dep. Chem., City Univ., London, EC1V 0HB, UK  
SOURCE: European Polymer Journal (1982), 18(7), 597-606  
CODEN: EUPJAG; ISSN: 0014-3057  
DOCUMENT TYPE: Journal  
LANGUAGE: English

AB Photoinitiators for the polymerization of acrylates, containing aromatic ketones and alkanediamines, were studied. Rate consts. for the photoredn. of fluorenone [86-73-7] by alkanediamines were determined. The relative rates of photooxidn. of alkanediamines sensitized by benzophenone [119-61-9] were determined. There was little correlation between the susceptibility of an amine towards oxidation and its ability to reduce excited carbonyl groups. Several mixts. of aromatic ketones and alkanediamines initiate the polymerization of CH<sub>2</sub>CMeCO<sub>2</sub>Me. The efficiency of initiation is related to the efficiency of reaction of the triplet carbonyl compound with the amine. The efficiency of a given mixture of ketone and amine in curing films of acrylate oligomers is also governed by this efficiency. The structure of the aminoalkyl radical formed in initiation is more important in determining the efficiency of polymerization. Radicals of the type R<sub>2</sub>NCH•CH<sub>2</sub>OR were highly efficient.

L18 ANSWER 51 OF 51 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1982:582904 HCAPLUS Full-text  
DOCUMENT NUMBER: 97:182904  
TITLE: Some studies on the photoinitiated cationic polymerization of epoxides  
AUTHOR(S): Davidson, R. S.; Goodin, J. W.  
CORPORATE SOURCE: Dep. Chem., City Univ., London, EC1V 0HB, UK  
SOURCE: European Polymer Journal (1982), 18(7), 589-95  
CODEN: EUPJAG; ISSN: 0014-3057  
DOCUMENT TYPE: Journal  
LANGUAGE: English

AB Alkylarylsulfonium compds. were prepared by alkylating diaryl sulfides with Et<sub>3</sub>O<sup>+</sup> PF<sub>6</sub><sup>-</sup> [17950-40-2] and by treating diaryl sulfides with alkyl halides in the presence of AgBF<sub>4</sub>. Photolysis of the sulfonium salts in MeOH gave diaryl sulfides and, in the case of triarylsulfonium compds., the corresponding aromatic hydrocarbon and its Me ether. Ph<sub>2</sub>I<sup>+</sup> BF<sub>4</sub><sup>-</sup> [313-39-3] and Ph<sub>2</sub>I<sup>+</sup> F<sub>6</sub><sup>-</sup> [58109-40-3] gave aryl fluorides, biaryls, and aromatic hydrocarbons. The salts decomposed by radical and ionic pathways. The ability of the compds. to sensitize the polymerization of epoxides depended on the counterion, PF<sub>6</sub><sup>-</sup> being more efficient than BF<sub>4</sub><sup>-</sup>, and on the structure of the cation. In sensitized cationic polymerization, excited singlet and triplet state sensitizers were both effective.

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L1 STR

GRAPH ATTRIBUTES:  
RING(S) ARE ISOLATED OR EMBEDDED  
NUMBER OF NODES IS 18

STEREO ATTRIBUTES: NONE

L5 2 SEA FILE=REGISTRY SUB=L3 SSS FUL L4  
L19 58 SEA FILE=REGISTRY ABB=ON PLU=ON L3 NOT L5  
L20 17 SEA FILE=HCAPLUS ABB=ON PLU=ON L19  
L22 14 SEA FILE=HCAPLUS ABB=ON PLU=ON L20 AND ?PHOTOINI?

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L22 ANSWER 1 OF 14 HCAPLUS COPYRIGHT 2007 ACS on STN  
ACCESSION NUMBER: 2006:1118917 HCAPLUS Full-text  
DOCUMENT NUMBER: 145:473182  
TITLE: Energy-curable ink-jet inks  
INVENTOR(S): Caiger, Nigel Anthony; Grant, Alexander; Selman,  
Hartley David; Wilson, Stephen Paul  
PATENT ASSIGNEE(S): Sun Chemical B.V., Neth.  
SOURCE: PCT Int. Appl., 18pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2006111746	A1	20061026	WO 2006-GB1433	20060420
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW			
RW:	AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			

PRIORITY APPLN. INFO.: EP 2005-252523 A 20050422

AB An energy-curable ink-jet ink comprising an epoxide monomer, a cationic photoinitiator other than a sulfonium initiator, and  $\gamma$ -butyrolactone and an optional oxetane monomer, free radical photoinitiator and  $\geq 1$  free-radical polymerizable monomers, and the ink exhibits a satisfactory level of cure and has a sufficiently low viscosity to be employed in ink-jet printing. The weight ratio of epoxide monomer to  $\gamma$ -butyrolactone is 15:1 - 2.5:1. Thus,  $\gamma$ -butyrolactone 15, ditrimethylolpropane oxetane (OXT 221) 21.4, cycloaliph. epoxide (Cyracure UVR 6105) 58.9, cationic initiator (Omnicat 550) 2.5, pigment (C.I. pigment Cyan 15:3) 2.1, and surfactant (Megaface F 479) 0.1 part were mixed to receive the ink-jet inks.

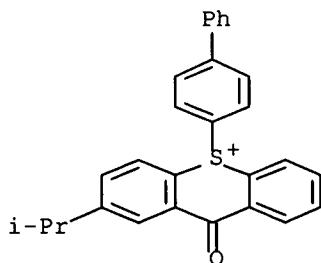
IT 591773-92-1, Omnicat 550

RL: CAT (Catalyst use); USES (Uses)  
(Omnicat 550; energy-curable ink-jet inks)

RN 591773-92-1 HCAPLUS

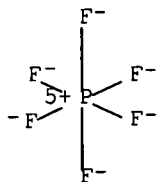
CN 9H-Thioxanthanium, 10-[1,1'-biphenyl]-4-yl-2-(1-methylethyl)-9-oxo-, hexafluorophosphate(1-) (1:1) (CA INDEX NAME)

CRN 591773-91-0  
CMF C28 H23 O S



CM 2

CRN 16919-18-9  
CMF F6 P  
CCI CCS



REFERENCE COUNT: 1 THERE ARE 1 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L22 ANSWER 2 OF 14 HCAPLUS COPYRIGHT 2007 ACS on STN  
ACCESSION NUMBER: 2006:878324 HCAPLUS Full-text  
DOCUMENT NUMBER: 145:273406  
TITLE: Energy-curable coating composition containing cyclic carbonates  
INVENTOR(S): Standing, Stephen Stuart; Herlihy, Shaun Lawrence; Davidson, Robert Stephen  
PATENT ASSIGNEE(S): Sun Chemical Limited, UK  
SOURCE: Brit. UK Pat. Appl., 27pp.  
CODEN: BAXXDU  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
GB 2423519	A	20060830	GB 2005-3948	20050225
WO 2006093678	A2	20060908	WO 2006-US5443	20060216
WO 2006093678	A3	20061109		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR,

KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX,  
 MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE,  
 SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC,  
 VN, YU, ZA, ZM, ZW  
 RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE,  
 IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ,  
 CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH,  
 GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY,  
 KG, KZ, MD, RU, TJ, TM

PRIORITY APPLN. INFO.:

GB 2005-3948

A 20050225

AB An energy-curable coating composition comprises an epoxide monomer or oligomer, a cationic photoinitiator, and a cyclic carbonate, wherein the cyclic carbonate is present in an amount of at least 7 weight % based on the composition with the proviso that the composition does not comprise 57.1% 3,4-epoxy-cyclohexylmethyl-3',4'-epoxycyclohexane carbonate, 10.0% 3-ethyl-3-hydroxymethyl-oxetane, 15.0% pigment, 17.4% 10-biphenyl-4-yl-2-isopropyl-9-oxo-9H-thioxanthen-10-ium hexafluorophosphate (a cationic UV photoinitiator) as a 23 % solution in propylene carbonate, and 0.5 % leveling additive. The cyclic carbonate may be present in an amount of 8-35 weight %, preferably 15-25 weight % and may be selected from propylene carbonate, glycerin carbonate, vinyl ethylene carbonate, ethylene carbonate, or butylene carbonate. The composition may be in the form of a varnish or printing ink, especially when formulated for inkjet printing. A process for preparing a cured coating composition is also disclosed, wherein the composition is applied to a substrate before exposure to radiation to cause curing. The radiation is typically in the form of UV radiation.

IT 591773-92-1, Meerkat

RL: CAT (Catalyst use); USES (Uses)

(energy-curable coating composition containing cyclic carbonates)

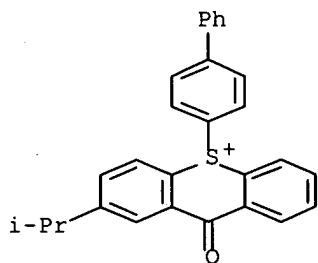
RN 591773-92-1 HCAPLUS

CN 9H-Thioxanthenium, 10-[1,1'-biphenyl]-4-yl-2-(1-methylethyl)-9-oxo-, hexafluorophosphate(1-) (1:1) (CA INDEX NAME)

CM 1

CRN 591773-91-0

CMF C28 H23 O S



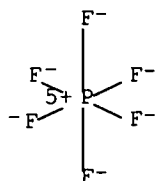
CM 2

CRN 16919-18-9

CMF F6 P

CCI CCS





REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L22 ANSWER 3 OF 14 HCAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2006:878309 HCAPLUS Full-text  
 DOCUMENT NUMBER: 145:273405  
 TITLE: Energy-curable coating composition containing cyclic carbonates and epoxides  
 INVENTOR(S): Standing, Stephen Stuart; Herlihy, Shaun Lawrence; Davidson, Robert Stephen  
 PATENT ASSIGNEE(S): Sun Chemical Limited, UK  
 SOURCE: Brit. UK Pat. Appl., 24pp.  
 CODEN: BAXXDU  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
GB 2423520	A	20060830	GB 2005-3951	20050225
WO 2006093680	A1	20060908	WO 2006-US5447	20060216

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

PRIORITY APPLN. INFO.: GB 2005-3951 A 20050225

AB A sprayable energy-curable coating composition comprises an epoxide monomer or oligomer, a cationic photoinitiator, and a cyclic carbonate, wherein the cyclic carbonate is present in an amount of at least 7% based on the composition. The cyclic carbonate may be present in an amount of 8-35%, preferably 15-25% and may be selected from propylene carbonate, glycerin carbonate, vinyl ethylene carbonate, ethylene carbonate, or butylene carbonate. The composition may addnl. comprise an oxetane, which may be in the form of a monomer or a polymer. The composition may have a viscosity of 7-50 cP at 25° and may be a varnish, paint, or printing ink especially when formulated for inkjet printing. A process for preparing a cured coating composition is also disclosed, wherein the composition is applied to a substrate before exposure to radiation to cause curing. The radiation is typically UV radiation.

IT 591773-92-1, Meerkat  
 RL: CAT (Catalyst use); USES (Uses)

(energy-curable coating composition containing cyclic carbonates and epoxides)

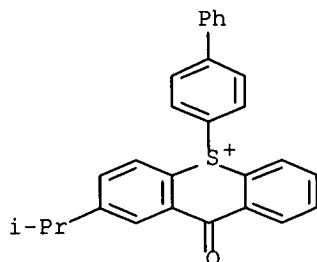
RN 591773-92-1 HCAPLUS

CN 9H-Thioxanthenium, 10-[1,1'-biphenyl]-4-yl-2-(1-methylethyl)-9-oxo-, hexafluorophosphate(1-) (1:1) (CA INDEX NAME)

CM 1

CRN 591773-91-0

CMF C28 H23 O S

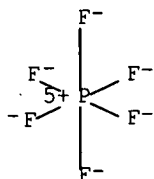


CM 2

CRN 16919-18-9

CMF F6 P

CCI CCS



REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L22 ANSWER 4 OF 14 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2006:840029 HCAPLUS Full-text

DOCUMENT NUMBER: 145:250929

TITLE: Time/temperature indicator containing acid- or base-activated color-changing dye

INVENTOR(S): Leonard, Michael William; Azizian, Farid

PATENT ASSIGNEE(S): Sun Chemical Limited, UK

SOURCE: Brit. UK Pat. Appl., 27pp.

CODEN: BAXXDU

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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GB 2423361	A	20060823	GB 2005-3633	20050222
PRIORITY APPLN. INFO.:			GB 2005-3633	20050222

AB The indicator useful for printing on packaged food and medicine, comprises a substrate supporting a first and a second layer, the first layer comprising a dye which will change color in the presence of an acid or a base, and the second layer comprising a neutral compound which, upon UV irradiation, forms an acid or a base, one of the first and second layers overlying the other of the first and second layers. The layers are in direct contact. The dye is a leuco dye in activated form and the neutral compound is be a photo-latent base. Alternatively, the leuco dye is in its reduced form and the neutral compound is a cationic photoinitiator .

IT 591773-92-1, Meerkat  
 RL: CAT (Catalyst use); USES (Uses)  
 (photoinitiator; manufacture of time/temperature indicator containing acid- or base-activated color-changing dye)

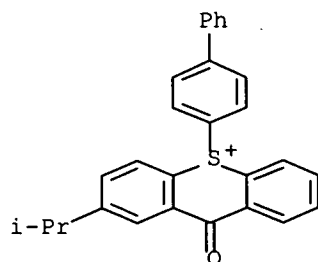
RN 591773-92-1 HCAPLUS

CN 9H-Thioxanthenium, 10-[1,1'-biphenyl]-4-yl-2-(1-methylethyl)-9-oxo-, hexafluorophosphate(1-). (1:1) (CA INDEX NAME)

CM 1

CRN 591773-91-0

CMF C28 H23 O S

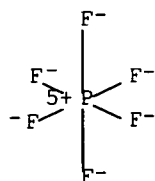


CM 2

CRN 16919-18-9

CMF F6 P

CCI CCS

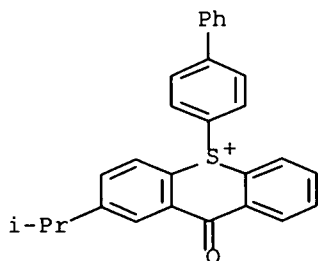


REFERENCE COUNT: 1 THERE ARE 1 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

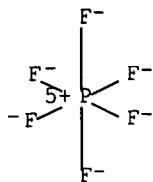
ACCESSION NUMBER: 2006:835014 HCAPLUS Full-text  
 DOCUMENT NUMBER: 145:250927  
 TITLE: Time/temperature indicator using resin containing  
 leuco dye and photoinitiator  
 INVENTOR(S): Leonard, Michael William; Herlihy, Shaun Lawrence;  
 Azizian, Farid  
 PATENT ASSIGNEE(S): Sun Chemical Limited, UK  
 SOURCE: Brit. UK Pat. Appl., 39pp.  
 CODEN: BAXXDU  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
GB 2423359	A	20060823	GB 2005-3631	20050222

PRIORITY APPLN. INFO.: GB 2005-3631 20050222  
 AB The indicator comprises a combination of a leuco dye or a mixture of such dyes and a thioxanthonium salt cationic photoinitiator printed on a substrate. The initiator is initialized by exposure to UV radiation and can be used to monitor the shelf life of perishable materials, such as food or drugs. The dye(s) and photoinitiator are suspended in a resin. The material can be exposed to UV radiation sufficient to convert the photoinitiator to an acid form.  
 IT 591773-92-1, Meerkat  
 RL: CAT (Catalyst use); FFD (Food or feed use); THU (Therapeutic use);  
 BIOL (Biological study); USES (Uses)  
 (photoinitiator; manufacture of time/temperature indicator containing leuco dyes and photoinitiator)  
 RN 591773-92-1 HCAPLUS  
 CN 9H-Thioxanthenium, 10-[1,1'-biphenyl]-4-yl-2-(1-methylethyl)-9-oxo-, hexafluorophosphate(1-) (1:1) (CA INDEX NAME)  
 CM 1  
 CRN 591773-91-0  
 CMF C28 H23 O S



CM 2  
 CRN 16919-18-9  
 CMF F6 P  
 CCI CCS



L22 ANSWER 6 OF 14 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2006:529216 HCAPLUS Full-text

DOCUMENT NUMBER: 145:29634

TITLE: Cationically curable coating, ink, adhesive compositions and preparation of cured coatings

INVENTOR(S): Standing, Stephen Stuart; Walkling, Mark William; Herlihy, Shaun Lawrence; Tucker, James Robert

PATENT ASSIGNEE(S): Sun Chemical Limited, UK

SOURCE: Brit. UK Pat. Appl., 47 pp.

CODEN: BAXXDU

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
GB 2420782	A	20060607	GB 2004-26380	20041201
WO 2006060281	A2	20060608	WO 2005-US42783	20051123
WO 2006060281	A3	20060706		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				

PRIORITY APPLN. INFO.: GB 2004-26380 A 20041201

AB A cationically curable coating composition comprises (a) 5-98.5% cationically polymerizable component comprising  $\geq 2$  polymerizable oxetane groups and (b) 1.0-10% initiator comprising a thioxanthonium salt. The comps. can be cured by application of energy such as UV radiation. The polymerizable oxetane is preferably bis[(1-ethyl-3-oxetanyl)methyl] ether and the thioxanthonium salt is 10-biphenyl-4-yl-2-isopropyl-9-oxo-9H-thioxanthen-10-ium hexaphosphate. The comps. are useful for printing inks, adhesives and flexog. printing. An example magenta ink contained Pigment Red 57.1 14.600 Solsperser 32000 1.460, UVR-6105 49.379, MEERKAT cationic photoinitiator 5.400, propylene carbonate 6.750, and OXT 221 22.411%.

IT 591773-92-1, MEERKAT

RL: CAT (Catalyst use); USES (Uses)

(MEERKAT; cationically UV curable coating comps. containing)

RN 591773-92-1 HCAPLUS

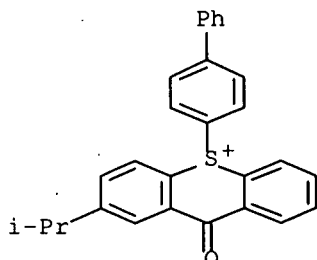
CN 9H-Thioxanthenium, 10-[1,1'-biphenyl]-4-yl-2-(1-methylethyl)-9-oxo-,

hexafluorophosphate(1-) (1:1) (CA INDEX NAME)

CM 1

CRN 591773-91-0

CMF C28 H23 O S

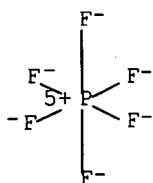


CM 2

CRN 16919-18-9

CMF F6 P

CCI CCS



REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L22 ANSWER 7 OF 14 HCAPLUS COPYRIGHT 2007 ACS on STN  
ACCESSION NUMBER: 2006:293908 HCAPLUS Full-text  
DOCUMENT NUMBER: 145:197935  
TITLE: Photolithographically patternable electroluminescent liquid crystalline materials for full-color organic light emitting displays  
AUTHOR(S): McGlashon, Andrew J.; Whitehead, Katherine S.; Bradley, Donal D. C.; Heeney, Martin; McCulloch, Iain; Zhang, Weimin; Campbell, Alasdair J.  
CORPORATE SOURCE: Experimental Solid State Group, Blackett Laboratory, Imperial College of Science, Technology, Medicine, SW7 2AZ, UK  
SOURCE: Proceedings of SPIE-The International Society for Optical Engineering (2006), 6117(Organic Photonic Materials and Devices VIII), 61170S/1-61170S/10  
CODEN: PSISDG; ISSN: 0277-786X  
PUBLISHER: SPIE-The International Society for Optical Engineering  
DOCUMENT TYPE: Journal  
LANGUAGE: English

AB Displays based on polymer light emitting diodes are attractive due to their emissive nature, their wide viewing angles and the ability of electroluminescent conjugated polymers to be solution processable at room temperature and pressure. It is difficult, however, to deposit sep. red, green and blue (RGB) pixels and to maximize performance by making the devices multi-layered. Here we present recent results on a semiconducting conjugated reactive-mesogen OLED material which is solution processable, can be potentially cured and patterned by photolithog. and used in multi-layer devices. This material consists of a conjugated pentathiophene core with reactive end-groups. Spectroscopy, calorimetry and microscopy show that it forms crystalline, aggregate, liquid-crystalline and isotropic phases at a range of different temps. The material is deposited by spin-coating from solution Low d. doping with a cationic photoinitiator and exposure to a specific UV wavelength to avoid damage to the conjugated core leads to crosslinking into an insol. network. Current-voltage-luminosity and spectral measurements in standard OLED device structures show the effect of crosslinking on the transport and injection properties of the material. Quenching of fluorescence and electroluminescence is discussed. Insertion of lower-energy gap, fluorescent small mols. can potentially be used to tune the emission to any desired color but material limitations to this technique due to dopant removal during the washing procedure were observed

IT 591773-92-1

RL: CAT (Catalyst use); PRP (Properties); USES (Uses)  
(photoinitiator, photolithog. patternable electroluminescent  
liquid crystalline materials for full color organic light emitting  
displays)

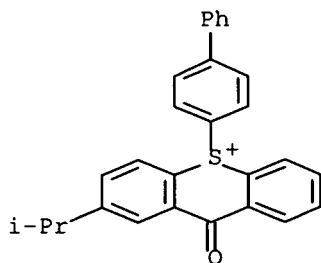
RN 591773-92-1 HCAPLUS

CN 9H-Thioxanthenium, 10-[1,1'-biphenyl]-4-yl-2-(1-methylethyl)-9-oxo-,  
hexafluorophosphate(1-) (1:1) (CA INDEX NAME)

CM 1

CRN 591773-91-0

CMF C28 H23 O S

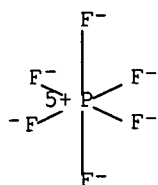


CM 2

CRN 16919-18-9

CMF F6 P

CCI CCS



REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L22 ANSWER 8 OF 14 HCAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2004:974604 HCAPLUS Full-text  
 DOCUMENT NUMBER: 143:8030  
 TITLE: Novel cationic photoinitiators  
 AUTHOR(S): Casiraghi, Angelo; Cattaneo, Massimo; Norcini, Gabriele; Visconti, Marco  
 CORPORATE SOURCE: Lamberti S.p.A., Albizzate, 21040, Italy  
 SOURCE: Technical Conference Proceedings - UV & EB Technology Expo & Conference, Charlotte, NC, United States, May 2-5, 2004 (2004), 102-108. RadTech International North America: Chevy Chase, Md.  
 CODEN: 69FW06  
 DOCUMENT TYPE: Conference; (computer optical disk)  
 LANGUAGE: English

AB To prevent release of toxic byproducts during cure of epoxies and vinyl ethers/esters, a number of thianthrene-derived cationic photoinitiators was developed and tested on their reactivity (cure speed) and performance (scratch) in clear and pigmented coating formulations. The following initiators were studied: monothianthrenium hexafluorophosphates (5-(p-substituted)arylthianthrenium salts; substituents: Me, 2-hydroxyethyl, Ph, EtO, 2-hydroxyethoxy, OPh, 2-hydroxyethylsulfanyl, SPh, and F), bisthianthrenium hexafluorophosphates (2 thianthrenium moieties linked in 5,5'-position via 4,4'-biphenylether, 4,4'-biphenylsulfide, or 4,4'-biphenyl bridge), 5-(4-phenyloxy)phenyldibenzothiophenium PF6, 10-(4-phenyloxy)phenyl-9H-thioxanthenium PF6, and 2-isopropyl-10-(4-phenyloxy)phenyl-9H-9-oxothioxanthenium PF6. Arylthianthrenium hexafluorophosphates showed efficient photoinitiating properties.

IT 478774-65-1 492466-44-1 492466-46-3  
 492466-64-5 591773-99-8 591774-04-8  
 852394-16-2

RL: CAT (Catalyst use); USES (Uses)  
 (cationic photoinitiators for crosslinking of epoxy resins for coatings)

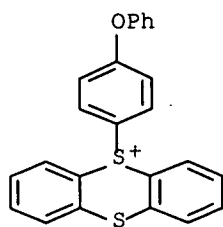
RN 478774-65-1 HCAPLUS

CN Thianthrenium, 5-(4-phenoxyphenyl)-, hexafluorophosphate(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 478774-64-0  
 CMF C24 H17 O S2



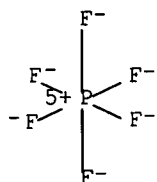


CM 2

CRN 16919-18-9

CMF F6 P

CCI CCS



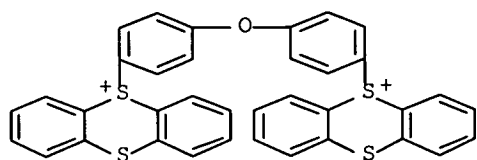
RN 492466-44-1 HCAPLUS

CN Thianthrenium, 5,5'-(oxydi-4,1-phenylene)bis-, bis[hexafluorophosphate(1-)] (9CI) (CA INDEX NAME)

CM 1

CRN 492466-43-0

CMF C36 H24 O S4

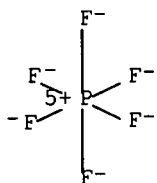


CM 2

CRN 16919-18-9

CMF F6 P

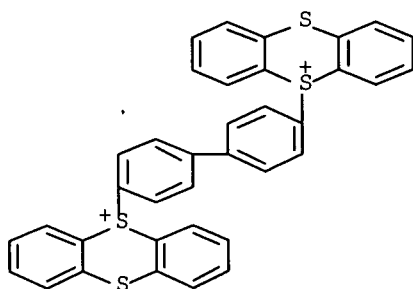
CCI CCS



RN 492466-46-3 HCAPLUS  
 CN Thianthrenium, 5,5'-[1,1'-biphenyl]-4,4'-diylbis-,  
 bis[hexafluorophosphate(1-)] (9CI) (CA INDEX NAME)

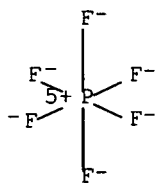
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CRN 492466-45-2  
 CMF C36 H24 S4



CM 2

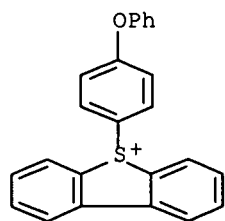
CRN 16919-18-9  
 CMF F6 P  
 CCI CCS



RN 492466-64-5 HCAPLUS  
 CN Dibenzothiophenium, 5-(4-phenoxyphenyl)-, hexafluorophosphate(1-) (9CI)  
 (CA INDEX NAME)

CM 1

CRN 492466-63-4  
 CMF C24 H17 O S

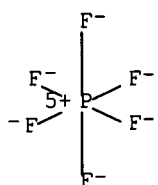


CM 2

CRN 16919-18-9

CMF F6 P

CCI CCS



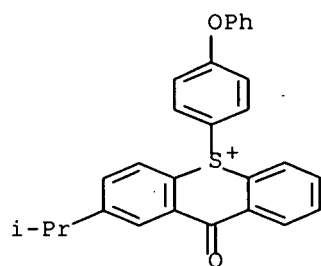
RN 591773-99-8 HCAPLUS

CN 9H-Thioxanthenium, 2-(1-methylethyl)-9-oxo-10-(4-phenoxyphenyl)-;  
hexafluorophosphate(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 591773-98-7

CMF C28 H23 O2 S

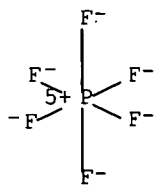


CM 2

CRN 16919-18-9

CMF F6 P

CCI CCS



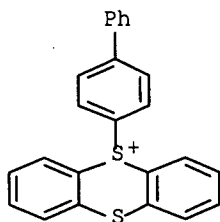
RN 591774-04-8 HCAPLUS

CN Thianthrenium, 5-[1,1'-biphenyl]-4-yl-, hexafluorophosphate(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 478774-67-3

CMF C24 H17 S2

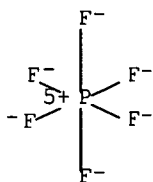


CM 2

CRN 16919-18-9

CMF F6 P

CCI CCS



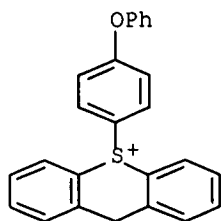
RN 852394-16-2 HCAPLUS

CN 9H-Thioxanthenium, 10-(4-phenoxyphenyl)-, hexafluorophosphate(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 852394-15-1

CMF C25 H19 O S

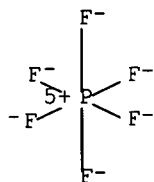


CM 2

CRN 16919-18-9

CMF F6 P

CCI CCS

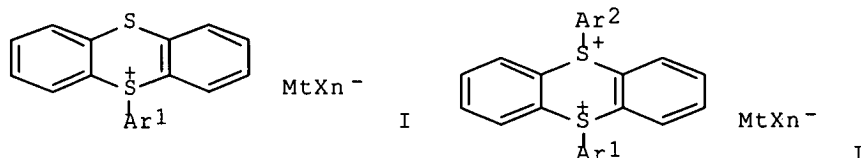


REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L22 ANSWER 9 OF 14 HCAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2003:931621 HCAPLUS Full-text  
 DOCUMENT NUMBER: 140:10653  
 TITLE: Photopolymerizable compositions comprising thianthrenium salt cationic photoinitiators  
 INVENTOR(S): Crivello, James V.  
 PATENT ASSIGNEE(S): Rensselaer Polytechnic Institute, USA  
 SOURCE: PCT Int. Appl., 40 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003098347	A1	20031127	WO 2003-US15622	20030516
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
CA 2485516	A1	20031127	CA 2003-2485516	20030516
AU 2003233559	A1	20031202	AU 2003-233559	20030516

EP 1504306                      A1      20050209                      EP 2003-728995                      20030516  
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,  
IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK  
US 2005064333                      A1      20050324                      US 2004-990114                      20041116  
PRIORITY APPLN. INFO.:                      US 2002-380948P                      P 20020516  
WO 2003-US15622                      W 20030516  
OTHER SOURCE(S):                      MARPAT 140:10653  
GI



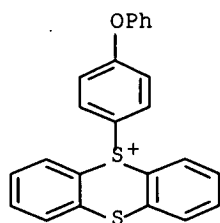
AB      Triarylsulfonium salts of formula I or II (Ar<sub>1,2</sub> = aryl, heteroaryl, pendant from a polymer chain; MtXn.hivin. = complex anion selected from PF<sub>6</sub>.hivin., SbF<sub>6</sub>.hivin., AsF<sub>6</sub>-, GaF<sub>6</sub>.hivin., BF<sub>4</sub>.hivin., (C<sub>6</sub>F<sub>5</sub>)<sub>4</sub>B.hivin., CF<sub>3</sub>SO<sub>3</sub>.hivin., C<sub>9</sub>F<sub>19</sub>SO<sub>3</sub>.hivin., (CF<sub>3</sub>SO<sub>2</sub>)<sub>3</sub>C.hivin.) are useful as initiators for cationic photopolymns. Triarylsulfonium salts cationic initiators are used in printing inks for photolithog. and stereolithog.

IT      478774-65-1 478774-66-2 628333-73-3  
RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)  
(photopolymerizable compns. comprising thianthrenium salt cationic photoinitiators for photolithog.)

RN      478774-65-1 HCAPLUS  
CN      Thianthrenium, 5-(4-phenoxyphenyl)-, hexafluorophosphate(1-) (9CI) (CA INDEX NAME)

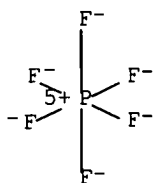
CM      1

CRN      478774-64-0  
CMF      C24 H17 O S2



CM      2

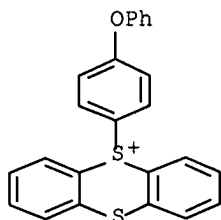
CRN      16919-18-9  
CMF      F6 P  
CCI      CCS



RN 478774-66-2 HCAPLUS  
 CN Thianthrenium, 5-(4-phenoxyphenyl)-, (OC-6-11)-hexafluoroantimonate(1-)  
 (9CI) (CA INDEX NAME)

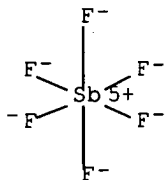
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CRN 478774-64-0  
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CM 2

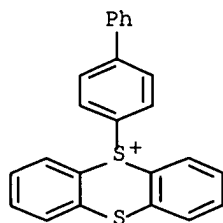
CRN 17111-95-4  
 CMF F6 Sb  
 CCI CCS



RN 628333-73-3 HCAPLUS  
 CN Thianthrenium, 5-[1,1'-biphenyl]-4-yl-, (SP-5-11)-pentafluoroantimonate(1-)  
 ) (9CI) (CA INDEX NAME)

CM 1

CRN 478774-67-3  
 CMF C24 H17 S2

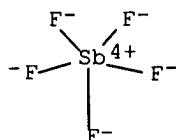


CM 2

CRN 116122-92-0

CMF F5 Sb

CCI CCS



REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L22 ANSWER 10 OF 14 HCAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2003:696887 HCAPLUS Full-text  
 DOCUMENT NUMBER: 139:231973  
 TITLE: Thioxanthone derivatives, and their use as cationic photoinitiators for varnish and ink compositions  
 INVENTOR(S): Herlihy, Shaun Lawrence  
 PATENT ASSIGNEE(S): Sun Chemical Corporation, USA  
 SOURCE: PCT Int. Appl., 36 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003072568	A1	20030904	WO 2003-US5820	20030226
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
CA 2477439	A1	20030904	CA 2003-2477439	20030226
AU 2003216432	A1	20030909	AU 2003-216432	20030226



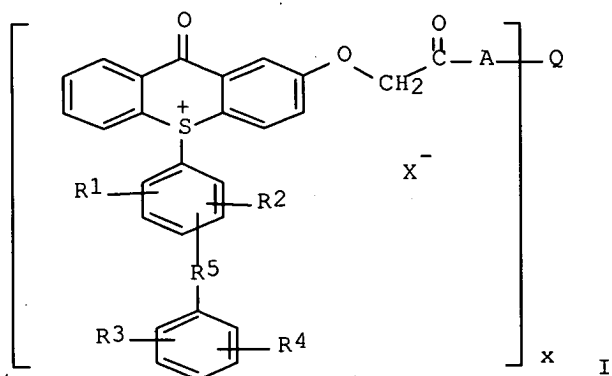
EP 1480968	A1	20041201	EP 2003-743250	20030226
EP 1480968	B1	20060913		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
US 2005165126	A1	20050728	US 2003-505615	20030226
JP 2005530698	T	20051013	JP 2003-571274	20030226
CN 1701067	A	20051123	CN 2003-809225	20030226
AT 339413	T	20061015	AT 2003-743250	20030226
ZA 2004006771	A	20050912	ZA 2004-6771	20040825

PRIORITY APPLN. INFO.:

GB 2002-4468	A	20020226
WO 2003-US5820	W	20030226

OTHER SOURCE(S): MARPAT 139:231973

GI



AB Photoinitiator compds. I [A = direct bond or [O(CHR7CHR6)a]y, [O(CH2)bCO]y, or (O(CH2)bCO)(y-1)[O(CHR7CHR6)a], where 1 of R6 and R7 is H and the other is H or Me; a = 1-2; b = 4-5; Q = residue of a polyhydroxy compound having 2-6 hydroxy groups; x > 1 but no greater than the number of available hydroxyl groups in Q; y = 1-10; R1-4 = H, hydroxy, or alkyl; or R1 and R3 are joined to form a fused ring system with the benzene rings to which they are attached; and R5 = direct bond, O or CH2] are useful as cationic photoinitiators, especially for use in surface coating applications, such as printing inks and varnishes.

IT 591781-52-1P 591781-55-4P 591781-56-5P  
595560-57-9P

RL: CAT (Catalyst use); IMF (Industrial manufacture); PREP (Preparation);  
USES (Uses)  
(thioxanthone derivative cationic photoinitiators for varnish and ink compns.)

RN 591781-52-1 HCAPLUS

CN Poly(oxy-1,4-butanediyl), α-[[[(10-[1,1'-biphenyl]-4-yl-9-oxo-9H-thioxanthenium-2-yl)oxy]acetyl]-ω-[[[(10-[1,1'-biphenyl]-4-yl-9-oxo-9H-thioxanthenium-2-yl)oxy]acetyl]oxy]-, bis[hexafluorophosphate(1-)] (9CI) (CA INDEX NAME)

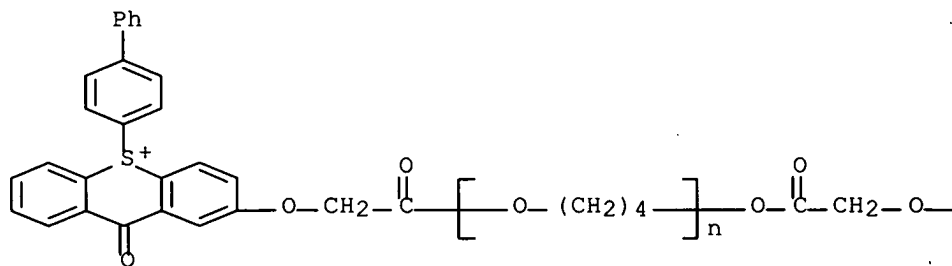
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CRN 591781-51-0

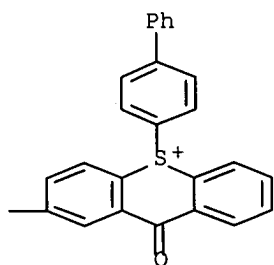
CMF (C4 H8 O)n C54 H36 O7 S2

CCI PMS

PAGE 1-A



PAGE 1-B

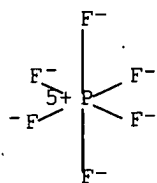


CM 2

CRN 16919-18-9

CMF F6 P

CCI CCS



RN 591781-55-4 HCAPLUS

CN Poly(oxy-1,4-butanediyl),  $\alpha$ -[[[9-oxo-10-(4-phenoxyphenyl)-9H-thioxanthenium-2-yl]oxy]acetyl]- $\omega$ -[[[9-oxo-10-(4-phenoxyphenyl)-9H-thioxanthenium-2-yl]oxy]acetyl]oxy]-, bis[hexafluorophosphate(1-)] (9CI)  
(CA INDEX NAME)

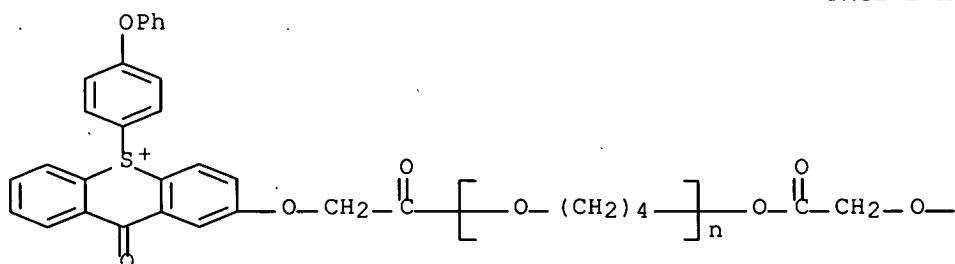
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CRN 591781-54-3

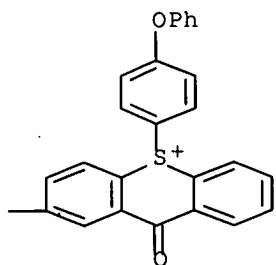
CMF (C4 H8 O)<sub>n</sub> C54 H36 O9 S2

CCI PMS

PAGE 1-A



PAGE 1-B

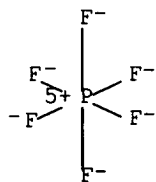


CM 2

CRN 16919-18-9

CMF F6 P

CCI CCS



RN 591781-56-5 HCAPLUS

CN Poly(oxy-1,4-butanediyl),  $\alpha$ -[[(10-[1,1'-biphenyl]-4-yl-9-oxo-9H-thioxanthenium-2-yl)oxy]acetyl]- $\omega$ -[[[(10-[1,1'-biphenyl]-4-yl-9-oxo-9H-thioxanthenium-2-yl)oxy]acetyl]oxy]-, bis[(OC-6-11)-hexafluoroantimonate(1-)] (9CI) (CA INDEX NAME)

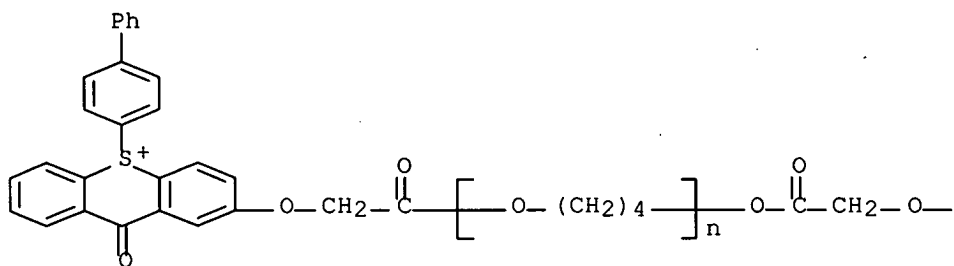
CM 1

CRN 591781-51-0

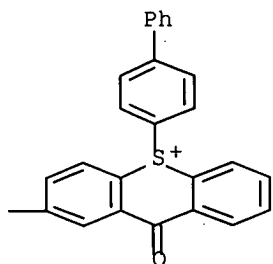
CMF (C4 H8 O)<sub>n</sub> C54 H36 O7 S2

CCI PMS

PAGE 1-A



PAGE 1-B

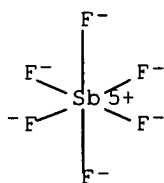


CM 2

CRN 17111-95-4

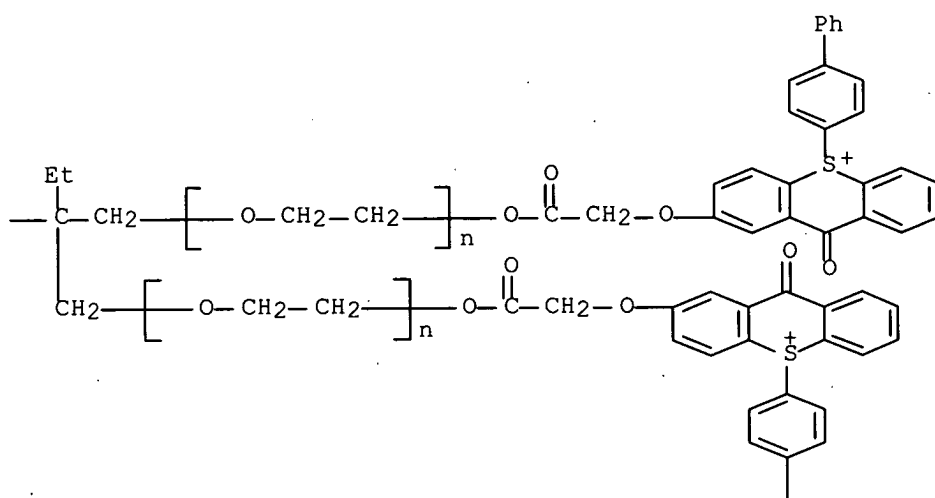
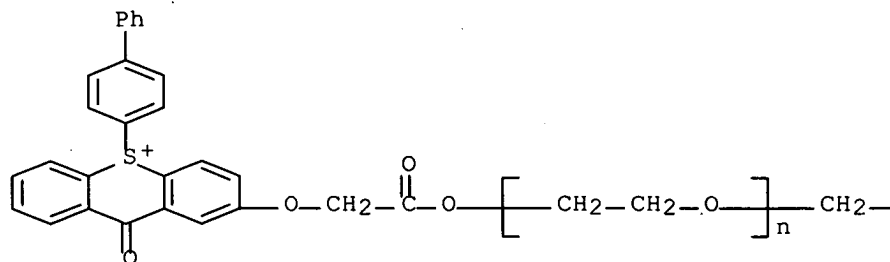
CMF F6 Sb

CCI CCS



RN 595560-57-9 HCAPLUS

CN Poly(oxy-1,2-ethanediyl),  $\alpha$ -hydro- $\omega$ -[[[(10-[1,1'-biphenyl]-4-yl-9-oxo-9H-thioxanthenium-2-yl)oxy]acetyl]oxy]-, ether with 2-ethyl-2-(hydroxymethyl)-1,3-propanediol (3:1) (9CI) (CA INDEX NAME)



Ph

REFERENCE COUNT: 1 THERE ARE 1 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L22 ANSWER 11 OF 14 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2003:696886 HCAPLUS Full-text

DOCUMENT NUMBER: 139:231972

TITLE: Fused ring compounds, and their use as cationic photoinitiators for ink and varnish formulations

INVENTOR(S): Herlihy, Shaun Lawrence

PATENT ASSIGNEE(S): Sun Chemical Corporation, USA

SOURCE: PCT Int. Appl., 53 pp.

CODEN: PIXXD2

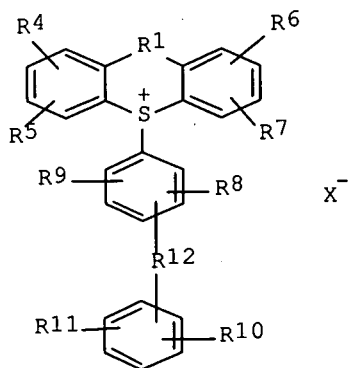
DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003072567	A1	20030904	WO 2003-US6106	20030226
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW			
RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
CA 2477414	A1	20030904	CA 2003-2477414	20030226
AU 2003217802	A1	20030909	AU 2003-217802	20030226
EP 1480967	A1	20041201	EP 2003-713768	20030226
R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK			
US 2005176969	A1	20050811	US 2003-505650	20030226
ZA 2004006770	A	20050912	ZA 2004-6770	20040825
US 7101998	B2	20060905	US 2005-505650	20050421
PRIORITY APPLN. INFO.:			GB 2002-4467	A 20020226
			WO 2003-US6106	W 20030226
OTHER SOURCE(S):		MARPAT 139:231972		
GI				



I

- AB Compds. I [R1 = O, CH2, S, C:O, (CH2)2 or NRa, where Ra = H or alkyl; R4-7 = H or various groups or atoms; R8-11 = H, hydroxy, or alkyl; or R9 and R11 form a fused ring system with the benzene rings to which they are attached; R12 = direct bond, O or CH2; and X is an anion; and esters thereof] are useful as cationic photoinitiators, especially for use in surface coating applications, such as printing inks and varnishes.
- IT 591773-90-9P 591773-92-1P 591773-94-3P  
591773-97-6P 591773-99-8P 591774-01-5P  
591774-03-7P 591774-04-8P 591774-12-8P  
591774-13-9P 592524-47-5P  
RL: CAT (Catalyst use); IMF (Industrial manufacture); PREP (Preparation);  
USES (Uses)

(fused heterocyclic sulfur derivative for cationic photoinitiators  
for ink and varnish formulations)

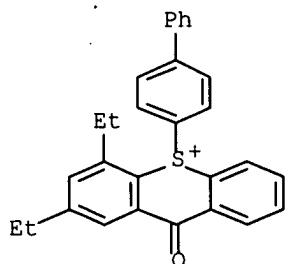
RN 591773-90-9 HCAPLUS

CN 9H-Thioxanthenium, 10-[1,1'-biphenyl]-4-yl-2,4-diethyl-9-oxo-,  
hexafluorophosphate(1-) (9CI) (CA INDEX NAME)

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CRN 591773-89-6

CMF C29 H25 O S

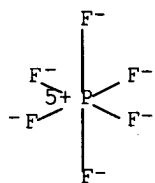


CM 2

CRN 16919-18-9

CMF F6 P

CCI CCS



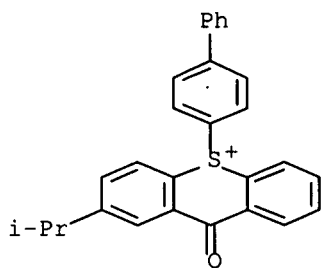
RN 591773-92-1 HCAPLUS

CN 9H-Thioxanthenium, 10-[1,1'-biphenyl]-4-yl-2-(1-methylethyl)-9-oxo-,  
hexafluorophosphate(1-) (1:1) (CA INDEX NAME)

CM 1

CRN 591773-91-0

CMF C28 H23 O S

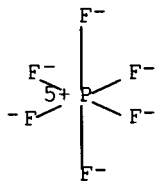


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CRN 16919-18-9

CMF F6 P

CCI CCS



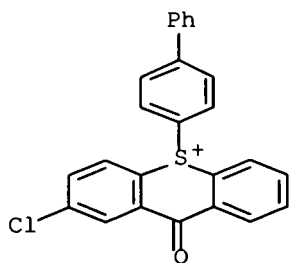
RN 591773-94-3 HCAPLUS

CN 9H-Thioxanthenium, 10-[1,1'-biphenyl]-4-yl-2-chloro-9-oxo-,  
hexafluorophosphate(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 591773-93-2

CMF C25 H16 Cl O S



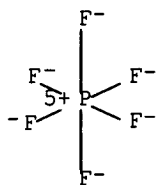
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CRN 16919-18-9

CMF F6 P

CCI CCS

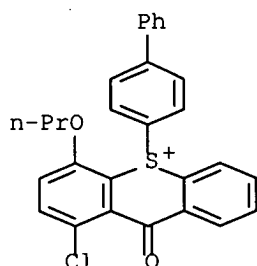




RN 591773-97-6 HCAPLUS  
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 hexafluorophosphate(1-) (9CI) (CA INDEX NAME)

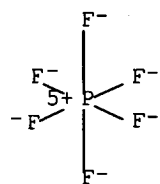
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CRN 591773-96-5  
 CMF C28 H22 Cl O2 S



CM 2

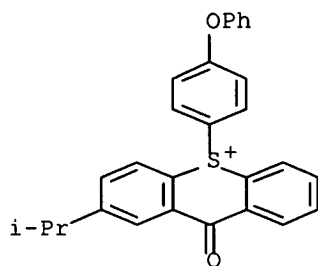
CRN 16919-18-9  
 CMF F6 P  
 CCI CCS



RN 591773-99-8 HCAPLUS  
 CN 9H-Thioxanthenium, 2-(1-methylethyl)-9-oxo-10-(4-phenoxyphenyl)-,  
 hexafluorophosphate(1-) (9CI) (CA INDEX NAME)

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CRN 591773-98-7  
 CMF C28 H23 O2 S

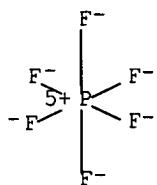


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CRN 16919-18-9

CMF F6 P

CCI CCS



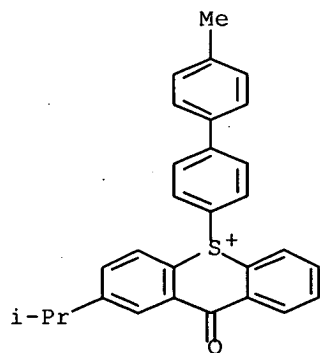
RN 591774-01-5 HCAPLUS

CN 9H-Thioxanthenium, 10-(4'-methyl[1,1'-biphenyl]-4-yl)-2-(1-methylethyl)-9-oxo-, hexafluorophosphate(1-) (9CI) (CA INDEX NAME)

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CRN 591774-00-4

CMF C29 H25 O S

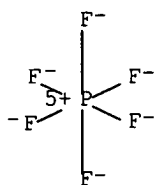


CM 2

CRN 16919-18-9

CMF F6 P

CCI CCS



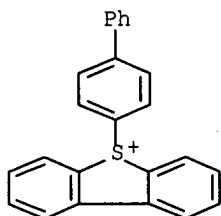
RN 591774-03-7 HCAPLUS

CN Dibenzothiophenium, 5-[1,1'-biphenyl]-4-yl-, hexafluorophosphate(1-) (9CI)  
(CA INDEX NAME)

CM 1

CRN 591774-02-6

CMF C24 H17 S

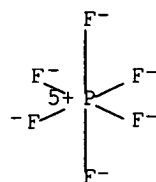


CM 2

CRN 16919-18-9

CMF F6 P

CCI CCS



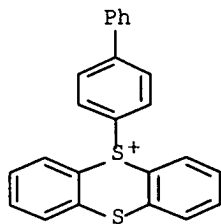
RN 591774-04-8 HCAPLUS

CN Thianthrenium, 5-[1,1'-biphenyl]-4-yl-, hexafluorophosphate(1-) (9CI) (CA  
INDEX NAME)

CM 1

CRN 478774-67-3

CMF C24 H17 S2

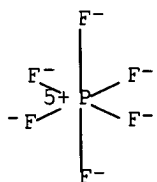


CM 2

CRN 16919-18-9

CMF F6 P

CCI CCS



RN 591774-12-8 HCAPLUS

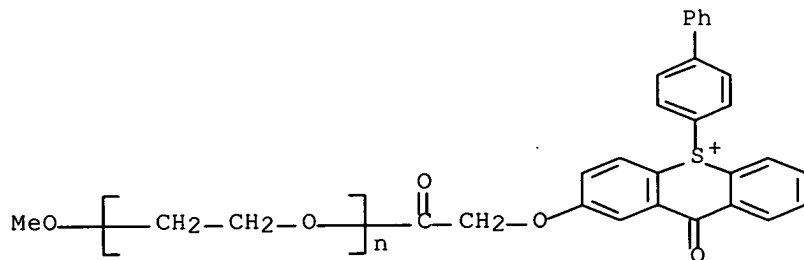
CN Poly(oxy-1,2-ethanediyl),  $\alpha$ -[[(10-[1,1'-biphenyl]-4-yl-9-oxo-9H-thioxanthenium-2-yl)oxy]acetyl]- $\omega$ -methoxy-, hexafluorophosphate(1-)  
(9CI) (CA INDEX NAME)

CM 1

CRN 591774-11-7

CMF (C2 H4 O)<sub>n</sub> C28 H21 O4 S

CCI PMS

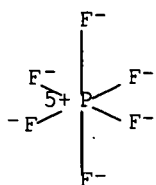


CM 2

CRN 16919-18-9

CMF F6 P

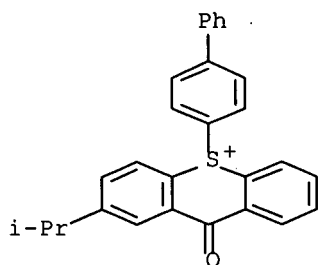
CCI CCS



RN 591774-13-9 HCAPLUS  
CN 9H-Thioxanthenium, 10-[1,1'-biphenyl]-4-yl-2-(1-methylethyl)-9-oxo-,  
(OC-6-11)-hexafluoroantimonate(1-) (9CI) (CA INDEX NAME)

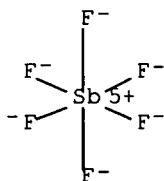
CM 1

CRN 591773-91-0  
CMF C28 H23 O S



CM 2

CRN 17111-95-4  
CMF F6 Sb  
CCI CCS

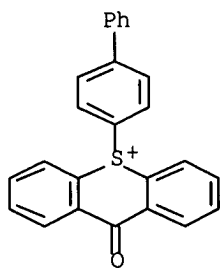


RN 592524-47-5 HCAPLUS  
CN 9H-Thioxanthenium, 10-[1,1'-biphenyl]-4-yl(1-methylethyl)-9-oxo-,  
hexafluorophosphate(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 592524-46-4

CMF C28 H23 O S  
CCI IDS



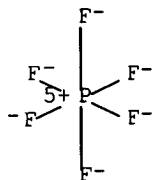
D1-Pr-i

CM 2

CRN 16919-18-9

CMF F6 P

CCI CCS



IT 591774-08-2P

RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)

(fused heterocyclic sulfur derivative for cationic photoinitiators  
for ink and varnish formulations)

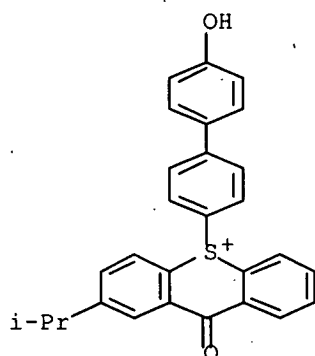
RN 591774-08-2 HCAPLUS

CN 9H-Thioxanthenium, 10-(4'-hydroxy[1,1'-biphenyl]-4-yl)-2-(1-methylethyl)-9-oxo-, hexafluorophosphate(1-) (9CI) (CA INDEX NAME)

CM 1

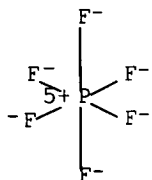
CRN 591774-07-1

CMF C28 H23 O2 S



CM 2

CRN 16919-18-9  
 CMF F6 P  
 CCI CCS



REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L22 ANSWER 12 OF 14 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2003:210709 HCAPLUS Full-text

DOCUMENT NUMBER: 138:304579

TITLE: Photoinitiated cationic polymerization using 5-arylthianthrenium salts

AUTHOR(S): Crivello, James V.; Jiang, Faming; Ma, Junqing

CORPORATE SOURCE: New York State Cen. for Polymer Synthesis, Dep. of Chem., Rensselaer Polytechnic Inst., Troy, NY, 12180, USA

SOURCE: Polymer Preprints (American Chemical Society, Division of Polymer Chemistry) (2003), 44(1), 13-14  
 CODEN: ACPPAY; ISSN: 0032-3934

PUBLISHER: American Chemical Society, Division of Polymer Chemistry

DOCUMENT TYPE: Journal; (computer optical disk)

LANGUAGE: English

AB 5-Arylthianthrenium salts were prepared using a simple, straightforward, versatile and high yield route. The salts were used as photoinitiators in cationic polymns. of vinyl and heterocyclic monomers and the reactions were studied using Fourier transform real-time IR spectroscopy. 5-Arylthianthrenium salts have initiator activity that compares well with diaryliodonium and triarylsulfonium salt cationic photoinitiators. The spectral response of these photoinitiators can be readily broadened into the long wavelength UV and visible regions of the spectrum through the use of

electron-transfer photosensitizers. The results obtained suggest that 5-arylthianthrenium salts are potential replacements for currently available triarylsulfonium salt photoinitiators in many applications.

IT 478774-65-1P, 5-(4-Phenoxyphenyl)thianthrenium hexafluorophosphate  
478774-68-4P, 5-[1,1'-Biphenyl]thianthrenium hexafluoroantimonate

RL: PNU (Preparation, unclassified); PREP (Preparation)  
(preparation and activity of arylthianthrenium salts as  
photoinitiators in cationic polymerization of vinyl and  
epoxy-heterocyclic monomers)

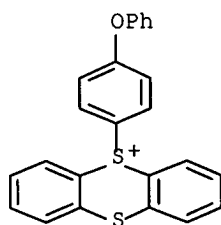
RN 478774-65-1 HCAPLUS

CN Thianthrenium, 5-(4-phenoxyphenyl)-, hexafluorophosphate(1-) (9CI) (CA  
INDEX NAME)

CM 1

CRN 478774-64-0

CMF C24 H17 O S2

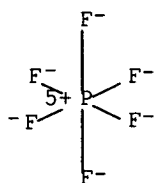


CM 2

CRN 16919-18-9

CMF F6 P

CCI CCS



RN 478774-68-4 HCAPLUS

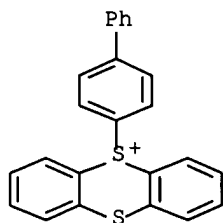
CN Thianthrenium, 5-[1,1'-biphenyl]-4-yl-, (OC-6-11)-hexafluoroantimonate(1-)  
(9CI) (CA INDEX NAME)

CM 1

CRN 478774-67-3

CMF C24 H17 S2



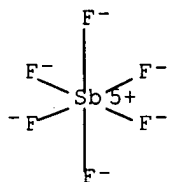


CM 2

CRN 17111-95-4

CMF F6 Sb

CCI CCS



REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L22 ANSWER 13 OF 14 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2003:76770 HCAPLUS Full-text

DOCUMENT NUMBER: 138:137739

TITLE: Sulfonium salts, methods for their preparation and use as photoinitiators for cationic polymerization

INVENTOR(S): Norcini, Gabriele; Casiraghi, Angelo; Visconti, Marco; Li Bassi, Giuseppe

PATENT ASSIGNEE(S): Lamberti S.P.A., Italy

SOURCE: PCT Int. Appl., 36 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003008404	A2	20030130	WO 2002-EP7415	20020704
WO 2003008404	A3	20030828		

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RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF,

CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

IT 2001MI1544	A1	20030120	IT 2001-MI1544	20010719
CA 2452566	A1	20030130	CA 2002-2452566	20020704
BR 2002005767	A	20030812	BR 2002-5767	20020704
EP 1417198	A2	20040512	EP 2002-767172	20020704
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JP 2005501040	T	20050113	JP 2003-513963	20020704
US 2004242901	A1	20041202	US 2004-484358	20040622
PRIORITY APPLN. INFO.:			IT 2001-MI1543	A 20010719
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			WO 2002-EP7415	W 20020704
OTHER SOURCE(S):	MARPAT 138:137739			
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\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

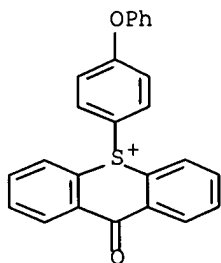
AB The present invention relates to sulfonium salts (shown as I and II; variables defined below; e.g. 4,4'-bis(thianthrenium-9-yl)diphenyl ether dihexafluorophosphate and 9-[4-(2-hydroxyethoxy)phenyl]thianthrenium hexafluorophosphate), to methods for their preparation and to radiation curable compns. containing them as photoinitiators for cationic polymerization. The sulfonium salts exhibit good solubility in the formulations without the drawbacks of known sulfonium salts, such as the release of undesired compds. (e.g. benzene), especially useful in food packaging. For I: n = 1 or 2; X = S, O, CH<sub>2</sub>, CO, single bond, N-R (R = H, or alkyl or aryl); Y<sub>1</sub> and Y<sub>2</sub> = H, C<sub>1</sub>-C<sub>6</sub> linear or branched alkyl, cycloalkyl, O-alkyl, hydroxy, halogen, S-alkyl, S-aryl; Z- = MQp (M = B, P, As or Sb; Q is F, Cl, Br, I, or perfluorophenyl; p = 4-6). A = III carrying two or three sulfonium salts units, wherein m = 1 or 2; R<sub>1</sub>-R<sub>9</sub> = single bond, H, halogen atom (F, Cl, Br, I), nitro, C<sub>1</sub>-C<sub>6</sub> linear or branched alkyl, C<sub>1</sub>-C<sub>6</sub> linear or branched alkoxy, S-C<sub>1</sub>-C<sub>6</sub> linear or branched alkylthio, with the proviso that at least one of R<sub>1</sub>-R<sub>5</sub> is H; when m = 1, B = O, S, SO, SO<sub>2</sub>, CH<sub>2</sub>, single bond, NR (R is H, C<sub>1</sub>-C<sub>6</sub> linear or branched alkyl), C<sub>2</sub>-C<sub>18</sub> linear or branched alkylene carrying at its ends two heteroatoms = O, S, N-R, the alkylene being optionally substituted with C<sub>1</sub>-C<sub>6</sub> linear or branched hydroxyalkyl, C<sub>1</sub>-C<sub>6</sub> linear or branched mercaptoalkyl, hydroxy, amino or aminoalkyl, an alicyclic group containing two N atoms in the ring, the alicyclic group being optionally substituted with OH, NH<sub>2</sub>, C<sub>1</sub>-C<sub>6</sub> linear or branched aminoalkyl. When m = 2, B = N, a C<sub>3</sub>-C<sub>18</sub> linear or branched alkyl carrying three heteroatoms = O, S, N-R, the alkyl being optionally substituted with C<sub>1</sub>-C<sub>6</sub> hydroxyalkyl, C<sub>1</sub>-C<sub>6</sub> mercaptoalkyl, hydroxy, amino or aminoalkyl, an alicyclic group with three N in the ring, the alicyclic group being optionally substituted with OH, NH<sub>2</sub>, C<sub>1</sub>-C<sub>6</sub> linear or branched aminoalkyl. For II: X = S, O, CH<sub>2</sub>, CO, single bond, N-R (R = H, or alkyl or aryl); Y<sub>1</sub>', Y<sub>2</sub>', Y<sub>3</sub>' = H, C<sub>1</sub>-C<sub>6</sub> linear or branched alkyl, cycloalkyl, O-alkyl, hydroxy, halogen, S-alkyl, S-aryl, NR<sub>1</sub>R<sub>2</sub> (R<sub>1</sub> and R<sub>2</sub> = H, linear or branched alkyl, cycloalkyl, aryl); L- = MQp (M = B, P, As or Sb; Q = F, Cl, Br, I, or perfluorophenyl; p = 4-6). D = a C<sub>2</sub>-C<sub>6</sub> linear or branched alkoxy or cycloalkoxy optionally substituted with ≥1 OH, OR, NH<sub>2</sub>, NHR, NR<sub>1</sub>R<sub>2</sub>, SH, SR (R, R<sub>1</sub>, R<sub>2</sub> = H, linear or branched alkyl, cycloalkyl, or aryl), a C<sub>2</sub>-C<sub>6</sub> linear or branched alkylthio or cycloalkylthio optionally substituted with ≥1 SH, SR, OH, OR, NH<sub>2</sub>, NHR, NR<sub>1</sub>R<sub>2</sub> (R, R<sub>1</sub>, R<sub>2</sub> = H, linear or branched alkyl, cycloalkyl, or aryl); NR<sub>3</sub>R<sub>4</sub> (R<sub>3</sub>, R<sub>4</sub> = H; aryl; C<sub>1</sub>-C<sub>12</sub> linear or branched alkyl, the alkyl being optionally substituted with ≥1 OH, OR, NH<sub>2</sub>, NHR, NR<sub>1</sub>R<sub>2</sub>, SH, SR (R, R<sub>1</sub>, R<sub>2</sub> = H, linear or branched alkyl, cycloalkyl, or aryl)). Prepns. of 16 intermediates and/or I/II are included.

For example, to a solution of di-Ph ether (3 g), thianthrene-9-oxide (4.06 g) and tetrachloroethylene (200 g), Al chloride (7 g) was added in one portion; the suspension was stirred at a gentle reflux for 75 min; then tetrachloroethylene (60 g), thianthrene-9-oxide (4.64 g) and Al chloride (8 g) were added maintaining the same condition of reaction; to complete the reaction 0.6 g of thianthrene-9-oxide were further added and the reaction mixture was stirred under reflux for 30 min more; the mixture was then poured into H<sub>2</sub>O, filtered and washed with Et ether; the aqueous phase was added dropwise into a solution of 8.5 g of KPF<sub>6</sub> dissolved in 2 L of distilled H<sub>2</sub>O; workup gave 94% 4,4'-bis(thianthrenium-9-yl)diphenyl ether dihexafluorophosphate. In another example, a reaction flask was charged with 2.5 g of dibenzothiophene-9-oxide (12.5 mmol), 50 g of fluorobenzene and stirred at room temperature 10 g of Al chloride (75 mmol) were added in 5 min; the suspension was stirred at reflux for 90 min; after cooling, H<sub>2</sub>O was added and the mixture was separated and filtered; 3.3 g of KPF<sub>6</sub> dissolved in 100 g of H<sub>2</sub>O and CH<sub>2</sub>Cl<sub>2</sub> were added to the aqueous solution; workup gave 40 mg 9-(4-fluorophenyl)dibenzothiophenium hexafluorophosphate. The organic layer was separated and the solvent removed to give a white solid (40 mg).

IT 492466-50-9P, 10-(4-Phenoxyphenyl)thioxanthenium-9-one  
 hexafluorophosphate 492466-60-1P, 2,6-Dimethyl-9-(4-  
 phenoxyphenyl)thianthrenium hexafluorophosphate  
 RL: CAT (Catalyst use); RCT (Reactant); SPN (Synthetic preparation); PREP  
 (Preparation); RACT (Reactant or reagent); USES (Uses)  
 (intermediate and photoinitiator; preparation of sulfonium salts  
 and use as photoinitiators for cationic polymerization)  
 RN 492466-50-9 HCAPLUS  
 CN 9H-Thioxanthenium, 9-oxo-10-(4-phenoxyphenyl)-, hexafluorophosphate(1-)  
 (9CI) (CA INDEX NAME)

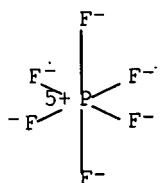
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CRN 492466-49-6  
 CMF C25 H17 O2 S



CM 2

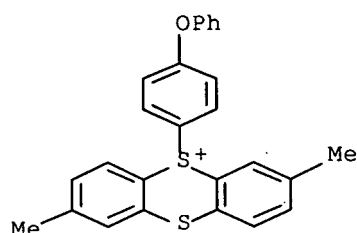
CRN 16919-18-9  
 CMF F6 P  
 CCI CCS



RN 492466-60-1 HCAPLUS  
 CN Thianthrenium, 2,7-dimethyl-5-(4-phenoxyphenyl)-, hexafluorophosphate(1-)  
 (9CI) (CA INDEX NAME)

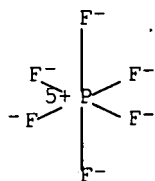
CM 1

CRN 492466-59-8  
 CMF C26 H21 O S2



CM 2

CRN 16919-18-9  
 CMF F6 P  
 CCI CCS



IT 492466-44-1P, 4,4'-Bis(thianthrenium-9-yl)diphenyl ether  
 dihexafluorophosphate 492466-46-3P, 4,4'-Bis(thianthrenium-9-  
 yl)diphenyl dihexafluorophosphate 492466-52-1P,  
 4,4'-Bis(thioxanthenium-10-yl-9-one)diphenyl ether dihexafluorophosphate  
 492466-64-5P, 9-(4-Phenoxyphenyl)dibenzothiophenium  
 hexafluorophosphate 492466-73-6P, 4,4'-Bis(2-  
 isopropylthioxanthenium-10-yl-9-one)diphenyl ether dihexafluorophosphate  
 492466-76-9P, 4,4'-Bis(4-isopropylthioxanthenium-10-yl-9-  
 one)diphenyl ether dihexafluorophosphate 492466-82-7P,  
 4,4'-Bis(2,6-dimethylthianthrenium-9-yl)diphenyl ether  
 dihexafluorophosphate  
 RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation);

USES (Uses)

(photoinitiator; preparation of sulfonium salts and use as photoinitiators for cationic polymerization)

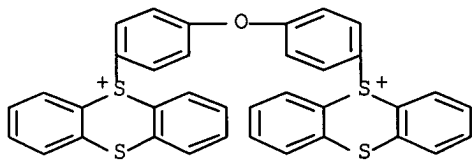
RN 492466-44-1 HCAPLUS

CN Thianthrenium, 5,5'-(oxydi-4,1-phenylene)bis-, bis[hexafluorophosphate(1-)] (9CI) (CA INDEX NAME)

CM 1

CRN 492466-43-0

CMF C36 H24 O S4

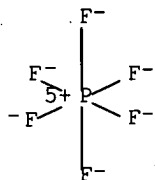


CM 2

CRN 16919-18-9

CMF F6 P

CCI CCS



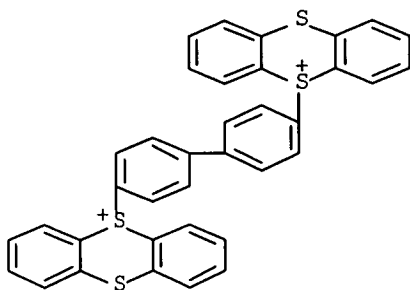
RN 492466-46-3 HCAPLUS

CN Thianthrenium, 5,5'-[1,1'-biphenyl]-4,4'-diylbis-, bis[hexafluorophosphate(1-)] (9CI) (CA INDEX NAME)

CM 1

CRN 492466-45-2

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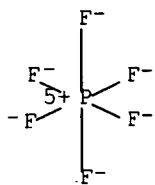


CM 2

CRN 16919-18-9

CMF F6 P

CCI CCS



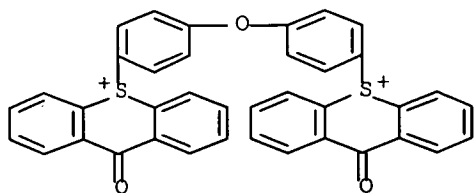
RN 492466-52-1 HCAPLUS

CN 9H-Thioxanthenium, 10,10'-(oxydi-4,1-phenylene)bis[9-oxo-,  
bis[hexafluorophosphate(1-)] (9CI) (CA INDEX NAME)

CM 1

CRN 492466-51-0

CMF C38 H24 O3 S2

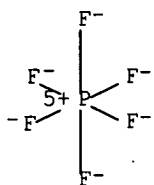


CM 2

CRN 16919-18-9

CMF F6 P

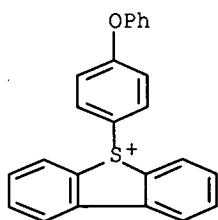
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RN 492466-64-5 HCAPLUS  
 CN Dibenzothiophenium, 5-(4-phenoxyphenyl)-, hexafluorophosphate(1-) (9CI)  
 (CA INDEX NAME)

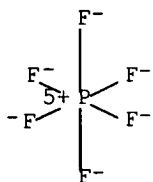
CM 1

CRN 492466-63-4  
 CMF C24 H17 O S



CM 2

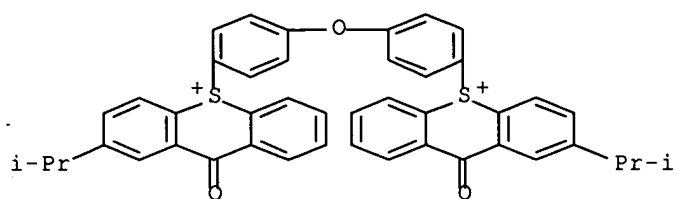
CRN 16919-18-9  
 CMF F6 P  
 CCI CCS



RN 492466-73-6 HCAPLUS  
 CN 9H-Thioxanthenium, 10,10'-(oxydi-4,1-phenylene)bis[2-(1-methylethyl)-9-oxo-  
 , bis[hexafluorophosphate(1-)] (9CI) (CA INDEX NAME)

CM 1

CRN 492466-72-5  
 CMF C44 H36 O3 S2

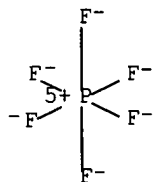


CM 2

CRN 16919-18-9

CMF F6 P

CCI CCS



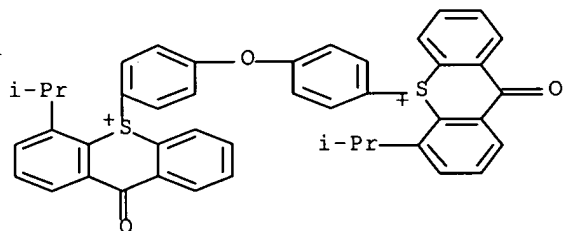
RN 492466-76-9 HCAPLUS

CN 9H-Thioxanthenium, 10,10'-(oxydi-4,1-phenylene)bis[4-(1-methylethyl)-9-oxo-, bis[hexafluorophosphate(1-)] (9CI) (CA INDEX NAME)

CM 1

CRN 492466-75-8

CMF C44 H36 O3 S2



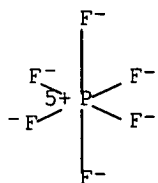
CM 2

CRN 16919-18-9

CMF F6 P

CCI CCS

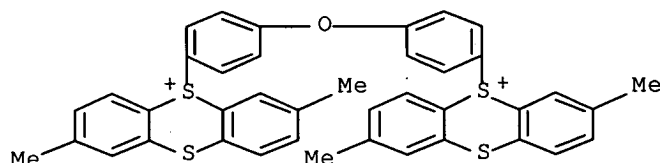




RN 492466-82-7 HCAPLUS  
 CN Thianthrenium, 5,5'-(oxydi-4,1-phenylene)bis[2,7-dimethyl-,  
 bis[hexafluorophosphate(1-)] (9CI) (CA INDEX NAME)

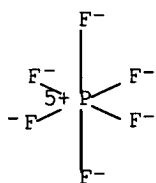
CM 1

CRN 492466-81-6  
 CMF C40 H32 O S4



CM 2

CRN 16919-18-9  
 CMF F6 P  
 CCI CCS



L22 ANSWER 14 OF 14 HCAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2002:753712 HCAPLUS Full-text  
 DOCUMENT NUMBER: 138:39588  
 TITLE: Synthesis and photoactivity of novel  
 5-arylthianthrenium salt cationic  
 photoinitiators  
 AUTHOR(S): Crivello, James V.; Ma, Junqing; Jiang, Faming  
 CORPORATE SOURCE: New York State Center for Polymer Synthesis,  
 Department of Chemistry, Rensselaer Polytechnic  
 Institute, Troy, NY, 12180, USA  
 SOURCE: Journal of Polymer Science, Part A: Polymer Chemistry  
 (2002), 40(20), 3465-3480  
 CODEN: JPACEC; ISSN: 0887-624X

PUBLISHER: John Wiley & Sons, Inc.  
DOCUMENT TYPE: Journal  
LANGUAGE: English

AB 5-Arylthianthrenium salts are a class of efficient triarylsulfonium salt photoinitiators for cationic polymerization. The compounds were prepared by a simple, straightforward, versatile, and high yield route. The photoinitiators were characterized by standard anal. and spectroscopic techniques, and their activity as cationic photoinitiators was compared with that of related triarylsulfonium salts of similar structures using Fourier transform real-time IR spectroscopy. Through the use of electron-transfer photosensitizers, the response of these photoinitiators can be readily spectrally broadened into the long-wavelength UV-visible regions of the spectrum. The results obtained suggest that 5-arylthianthrenium salts are potential replacements for now available triarylsulfonium salt photoinitiators in many applications.

IT 478774-65-1P 478774-66-2P 478774-68-4P

RL: CAT (Catalyst use); PRP (Properties); SPN (Synthetic preparation);  
PREP (Preparation); USES (Uses)

(preparation and characterization and activity of arylthianthrenium hexafluoroantimonates and hexafluorophosphates as photoinitiators in cationic polymers.)

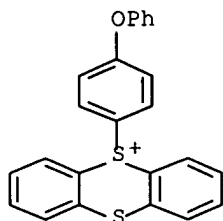
RN 478774-65-1 HCAPLUS

CN Thianthrenium, 5-(4-phenoxyphenyl)-, hexafluorophosphate(1-) (9CI) (CA INDEX NAME)

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CRN 478774-64-0

CMF C24 H17 O S2

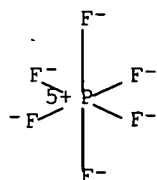


CM 2

CRN 16919-18-9

CMF F6 P

CCI CCS



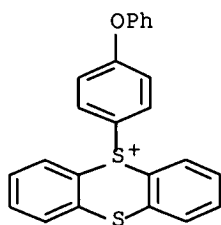
RN 478774-66-2 HCAPLUS

CN Thianthrenium, 5-(4-phenoxyphenyl)-, (OC-6-11)-hexafluoroantimonate(1-)

(9CI) (CA INDEX NAME)

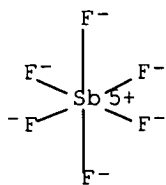
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CRN 478774-64-0  
CMF C24 H17 O S2



CM 2

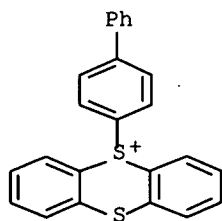
CRN 17111-95-4  
CMF F6 Sb  
CCI CCS



RN 478774-68-4 HCAPLUS  
CN Thianthrenium, 5-[1,1'-biphenyl]-4-yl-, (OC-6-11)-hexafluoroantimonate(1-)  
(9CI) (CA INDEX NAME)

CM 1

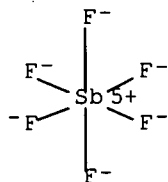
CRN 478774-67-3  
CMF C24 H17 S2



CM 2

CRN 17111-95-4

CMF F6 Sb  
CCI CCS



REFERENCE COUNT:

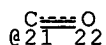
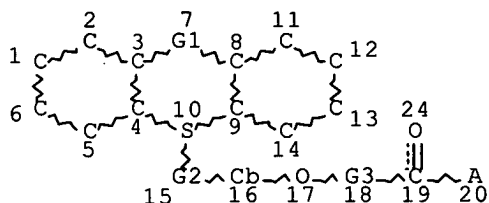
27

THERE ARE 27 CITED REFERENCES AVAILABLE FOR THIS  
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

=>

=&gt; d que 151

L3 STR



Cb @23

VAR G1=CH2/21

REP G2=(0-1) 23

REP G3=(1-12) CH

NODE ATTRIBUTES:

NSPEC IS RC AT 20

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

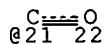
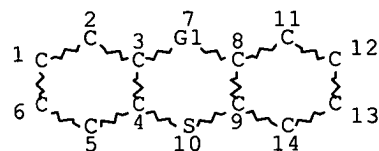
GRAPH ATTRIBUTES:

RSPEC I

NUMBER OF NODES IS 24

STEREO ATTRIBUTES: NONE

L5 STR



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NODE ATTRIBUTES:

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DEFAULT ECLEVEL IS LIMITED

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RSPEC I

NUMBER OF NODES IS 16

STEREO ATTRIBUTES: NONE

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L10 8 SEA FILE=REGISTRY SUB=L7 SSS FUL L3

L11 1 SEA FILE=HCAPLUS ABB=ON PLU=ON L10

L46 1402 SEA FILE=HCAPLUS ABB=ON PLU=ON DAVIDSON, R?/AU

L47 22 SEA FILE=HCAPLUS ABB=ON PLU=ON HERLIHY, S?/AU

L48 15 SEA FILE=HCAPLUS ABB=ON PLU=ON ROWATT, B?/AU

L50 1 SEA FILE=HCAPLUS ABB=ON PLU=ON (L46 OR L47 OR L48) AND

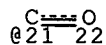
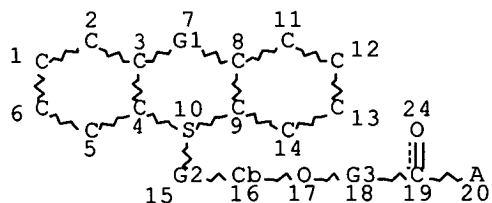
L11

L51 0 SEA FILE=HCAPLUS ABB=ON PLU=ON L11 NOT L50

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L3

STR

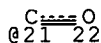
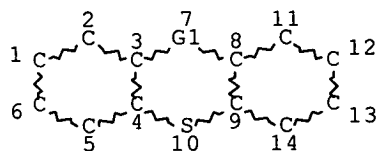


Cb @23

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 REP G3=(1-12) CH  
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 NSPEC IS RC AT 20  
 DEFAULT MLEVEL IS ATOM  
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:  
 RSPEC I  
 NUMBER OF NODES IS 24

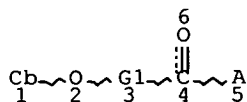
STEREO ATTRIBUTES: NONE  
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 NODE ATTRIBUTES:  
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 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:  
 RSPEC I  
 NUMBER OF NODES IS 16

STEREO ATTRIBUTES: NONE  
 L7 5762 SEA FILE=REGISTRY SSS FUL L5  
 L10 8 SEA FILE=REGISTRY SUB=L7 SSS FUL L3  
 L41 STR



REP G1=(1-12) CH  
 NODE ATTRIBUTES:  
 NSPEC IS RC AT 5

DEFAULT MLEVEL IS ATOM  
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:  
 RING(S) ARE ISOLATED OR EMBEDDED  
 NUMBER OF NODES IS 6

STEREO ATTRIBUTES: NONE

L43 14 SEA FILE=REGISTRY SUB=L7 SSS FUL L41  
 L44 6 SEA FILE=REGISTRY ABB=ON PLU=ON L43 NOT L10  
 L45 3 SEA FILE=HCAPLUS ABB=ON PLU=ON L44

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YOU HAVE REQUESTED DATA FROM FILE 'HCAPLUS' - CONTINUE? (Y)/N:y

L45 ANSWER 1 OF 3 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2006:49202 HCAPLUS Full-text

DOCUMENT NUMBER: 144:130590

TITLE: Radiation curable dendritic polymer compositions

INVENTOR(S): Loccufier, Johan; Vanmaele, Luc; Claes, Roland;  
 Van Luppen, Jaymes

PATENT ASSIGNEE(S): Agfa-Gevaert, Belg.

SOURCE: U.S. Pat. Appl. Publ., 32 pp.

CODEN: USXXCO

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 2

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2006014852	A1	20060119	US 2005-170016	20050629
EP 1616921	A1	20060118	EP 2004-103389	20040715
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, PL, SK, HR				
EP 1674499	A1	20060628	EP 2005-105542	20050622
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, PL, SK, BA, HR, IS, YU				
US 2006014851	A1	20060119	US 2005-169250	20050628
JP 2006045561	A	20060216	JP 2005-204861	20050713
CN 1721463	A	20060118	CN 2005-10084818	20050714
JP 2006028516	A	20060202	JP 2005-205990	20050714
CN 1721478	A	20060118	CN 2005-10084429	20050715
PRIORITY APPLN. INFO.:			EP 2004-103389	A 20040715
			US 2004-602445P	P 20040817
			EP 2004-106772	A 20041221
			EP 2004-103391	A 20040715

ED Entered STN: 19 Jan 2006

AB A radiation curable composition comprising a photoreactive polymer is disclosed comprising a dendritic polymer core with at least one initiating functional group and at least one co-initiating functional group. Suitable

radiation curable compns. are varnishes, lacquers, printing inks and radiation curable ink-jet inks. The dendritic polymeric core is preferably a hyperbranched polymer. A radiation-curable dendritic polymer was prepared from polyglycidol, p-benzophenoxyacetic acid, 1-piperidinepropionic acid, and 2-[2-(2-methoxyethoxy)ethoxy]acetic acid.

IT 873676-28-9P

(radiation curable dendritic polymer compns.)

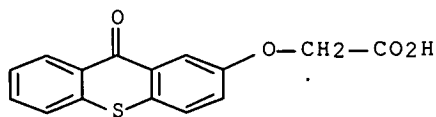
RN 873676-28-9 HCAPLUS

CN Oxiranemethanol, homopolymer, (4-benzoylphenoxy)acetate  
[2-(2-methoxyethoxy)ethoxy]acetate [(9-oxo-9H-thioxanthen-2-yl)oxy]acetate 1-piperidinepropanoate (9CI) (CA INDEX NAME)

CM 1

CRN 84434-05-9

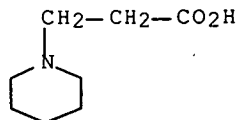
CMF C15 H10 O4 S



CM 2

CRN 26371-07-3

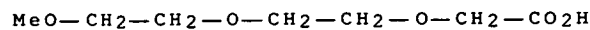
CMF C8 H15 N O2



CM 3

CRN 16024-58-1

CMF C7 H14 O5

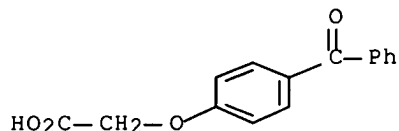


CM 4

CRN 6322-83-4

CMF C15 H12 O4



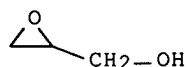


CM 5

CRN 25722-70-7  
 CMF (C3 H6 O2) x  
 CCI PMS

CM 6

CRN 556-52-5  
 CMF C3 H6 O2



INCL 522025000

CC 42-12 (Coatings, Inks, and Related Products)

IT 873676-24-5P 873676-25-6P 873676-26-7P 873676-27-8P  
 873676-28-9P

(radiation curable dendritic polymer compns.)

L45 ANSWER 2 OF 3 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1996:427276 HCAPLUS Full-text

DOCUMENT NUMBER: 125:196254

TITLE: Magic angle spinning NMR: a valuable tool for  
 monitoring the progress of reactions in solid  
 phase synthesis

AUTHOR(S): Wehler, Thomas; Westman, Jacob

CORPORATE SOURCE: Structural Chemistry, Pharmacia & Upjohn,  
 Stockholm, S-112 87, Swed.

SOURCE: Tetrahedron Letters (1996), 37(27), 4771-4774  
 CODEN: TELEAY; ISSN: 0040-4039

PUBLISHER: Elsevier

DOCUMENT TYPE: Journal

LANGUAGE: English

ED Entered STN: 19 Jul 1996

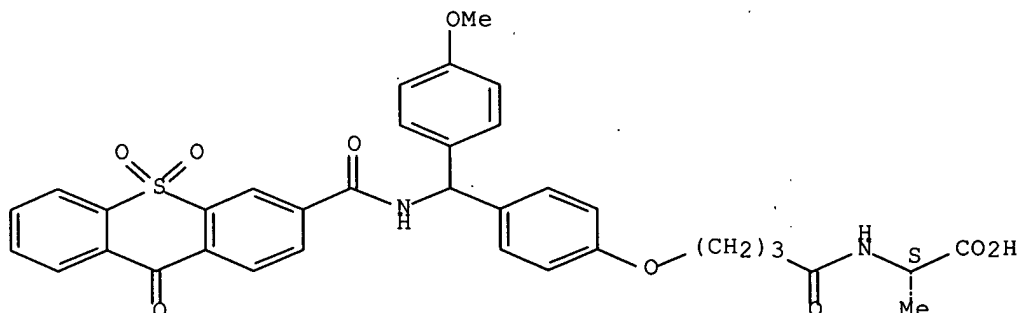
AB Proton NMR spectra of four different solid supports were obtained using the  
 magic angle spinning Nano NMR probe to evaluate their utility in solid phase  
 chemical. It was possible to analyze the spectra with respect to structure and  
 quantity. An intramol. cyclization reaction on the solid support in the Nano  
 tube could be followed directly.

IT 181181-92-ODP, amide with (aminomethyl)polystyrene  
 (magic angle spinning NMR for monitoring the progress of reactions  
 in solid phase synthesis)

10/538,243

RN 181181-92-0 HCAPLUS  
 CN L-Alanine, N-[4-[4-[[[(10,10-dioxido-9-oxo-9H-thioxanthen-3-yl)carbonyl]amino](4-methoxyphenyl)methyl]phenoxy]-1-oxobutyl]- (9CI)  
 (CA INDEX NAME)

Absolute stereochemistry.



CC 34-1 (Amino Acids, Peptides, and Proteins)  
 Section cross-reference(s): 77  
 IT 75-78-5DP, reaction products with lithiated styrene-divinylbenzene  
 9003-70-7DP, Styrene-divinylbenzene copolymer, reaction products with  
 dimethyldichlorosilane 181181-91-9DP, ether with TentaGel resin  
 181181-92-0DP, amide with (aminomethyl)polystyrene  
 181181-95-3DP, amide with (aminomethyl)polystyrene  
 (magic angle spinning NMR for monitoring the progress of reactions  
 in solid phase synthesis)

L45 ANSWER 3 OF 3 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1990:506437 HCAPLUS Full-text

DOCUMENT NUMBER: 113:106437

TITLE: Photoinitiators with a combined structure for  
 photopolymerizable compositions

INVENTOR(S): Koehler, Manfred; Ohngemach, Joerg

PATENT ASSIGNEE(S): Merck Patent G.m.b.H., Germany

SOURCE: Eur. Pat. Appl., 8 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: German

FAMILY ACC. NUM. COUNT: 1

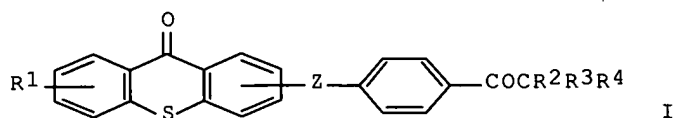
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 354458	A2	19900214	EP 1989-114238	19890802
EP 354458	A3	19901010		
R: DE, FR, GB				
DE 3826947	A1	19900222	DE 1988-3826947	19880809
JP 02091067	A	19900330	JP 1989-204009	19890808
US 5047556	A	19910910	US 1989-390940	19890808
PRIORITY APPLN. INFO.:			DE 1988-3826947	A 19880809

OTHER SOURCE(S): CASREACT 113:106437; MARPAT 113:106437

ED Entered STN: 16 Sep 1990

GI



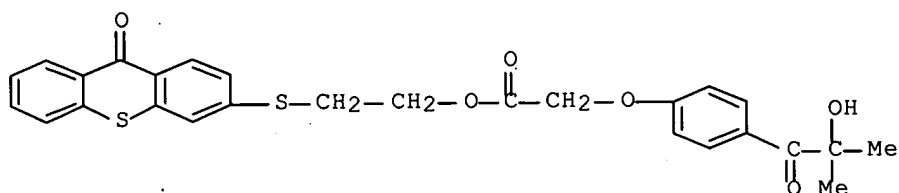
AB Photoinitiators of the combined structure I [R1 = H, halogen, C1-6 alkyl, C1-6 alkoxy, C1-6 alkylthio, NO2; R2, R3 = H, C1-12 alkyl, C2-12 alkenyl, or together form a C2-6 alkylene group; R4 = OR5, NR25, morpholino, piperidino, piperazino, SO2R6, OSO2R6 where R5 = H, C1-6 alkyl or C1-6 alkanoyl and R6 = C1-6 alkyl or optionally substituted Ph or benzyl; Z = CO2(CH2)mX or X(CH2)mYCO(CH2)nX where X = O or S; Y = O or NH; and m = 2-10, and n = 1-10] are used in the photopolymerization of ethylenically unsaturated compounds or binder systems containing such compounds. The photoinitiators are especially useful in photocuring printing inks and screen printing materials.

IT 128249-73-0P

(preparation of, as photoinitiator for photopolymerizable compounds.)

RN 128249-73-0 HCAPLUS

CN Acetic acid, [4-(2-hydroxy-2-methyl-1-oxopropyl)phenoxy]-, 2-[(9-oxo-9H-thioxanthene-3-yl)thio]ethyl ester (9CI) (CA INDEX NAME)



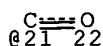
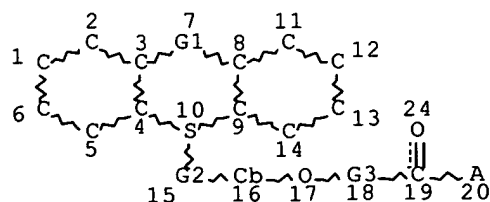
IC ICM C07D335-16  
ICS G03F007-00

CC 74-4 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
Section cross-reference(s): 27, 42

IT 128224-17-9P 128224-18-0P 128249-73-0P  
(preparation of, as photoinitiator for photopolymerizable compounds.)

=> d que 155

L3 STR

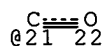
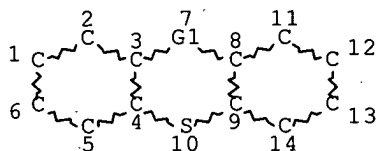


Cb @23

VAR G1=CH2/21  
 REP G2=(0-1) 23  
 REP G3=(1-12) CH  
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 NSPEC IS RC AT 20  
 DEFAULT MLEVEL IS ATOM  
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:  
 RSPEC I  
 NUMBER OF NODES IS 24

STEREO ATTRIBUTES: NONE  
 L5 STR



VAR G1=CH2/21  
 NODE ATTRIBUTES:  
 DEFAULT MLEVEL IS ATOM  
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:  
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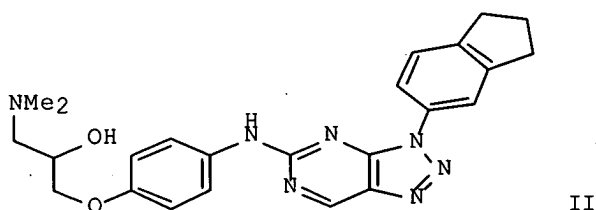
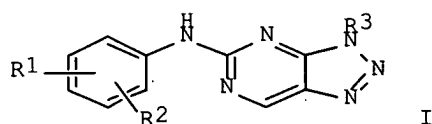
STEREO ATTRIBUTES: NONE  
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 L10 8 SEA FILE=REGISTRY SUB=L7 SSS FUL L3  
 L11 1 SEA FILE=HCAPLUS ABB=ON PLU=ON L10  
 L54 2 SEA FILE=MARPAT SSS FUL L3  
 L55 1 SEA FILE=MARPAT ABB=ON PLU=ON L54 NOT L11

=> d l55 ibib abs qhit

L55 ANSWER 1 OF 1 MARPAT COPYRIGHT 2007 ACS on STN  
 (ALL HITS ARE ITERATION INCOMPLETES)

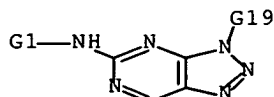
ACCESSION NUMBER: 145:167276 MARPAT Full-text  
 TITLE: Preparation of triazolopyrimidine derivatives as  
 serine-tyrosine and tyrosine kinases inhibitors  
 INVENTOR(S): Ludovici, Donald W.; Connors, Richard W.; Coats,  
 Steven J.; Liu, Li; De Corte, Bart L.; Johnson,  
 Dana L.; Schulz, Mark J.  
 PATENT ASSIGNEE(S): Janssen Pharmaceutica N.V., Belg.  
 SOURCE: PCT Int. Appl., 97 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2006076442	A2	20060720	WO 2006-US999	20060111
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
US 2007015207	A1	20070118	US 2006-329642	20060111
PRIORITY APPLN. INFO.:			US 2005-644466P	20050114
GI				



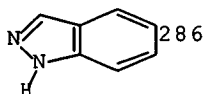
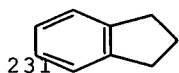
AB Title compds. represented by the formula I [wherein R1 = (un)substituted alkyl, alkenyl, alkynyl, etc.; R2 = H, (cyclo)alkyl, hydroxy, amino, etc.; R3 = aryl(alkyl), cycloalkyl, quinolinyl, etc.; and pharmaceutically acceptable salts thereof] were prepared as serine-tyrosine and tyrosine kinases inhibitors. For example, II was provided in a multi-step synthesis starting from reaction of 3-dimethylamino-1-propanol with 1-fluoro-4-nitrobenzene. I were tested for effects on the tyrosine kinase activity of Focal Adhesion Kinase (FAK) in vitro FAK ELISA kinase assay and CAK (Cyclin Dependent Kinase Activating Kinase) assay.

MSTR 1 ITERATION INCOMPLETE



G1 = 12 / carbocycle <containing 7-11 C, aromatic,  
6 normalized bonds, bicyclic, (0-1) 3-membered,  
(0-1) 4-membered, (0-1) 5-membered, (1-2) 6-membered,  
(0-1) 7-membered rings only> / heterocycle <containing 3-11  
atoms, 1 or more heteroatoms, zero or more N,  
zero or more O, zero or more S (no other heteroatoms),  
aromatic, 6 or more normalized bonds, bicyclic,  
(0-1) 3-membered, (0-1) 4-membered, (0-1) 5-membered,  
(1-2) 6-membered, (0-1) 7-membered rings only> /  
(Specifically claimed: 231 / 286)

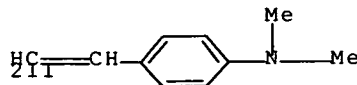
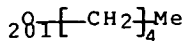
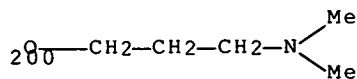
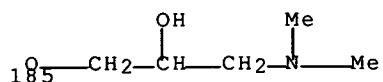
$1G^2-G4$

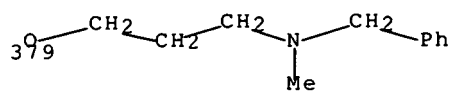
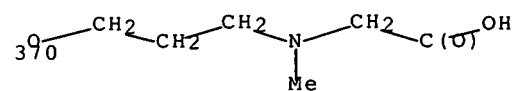
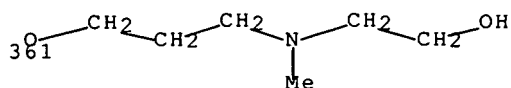
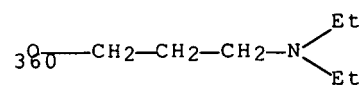
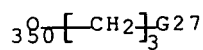
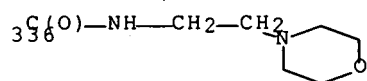
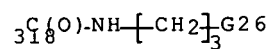
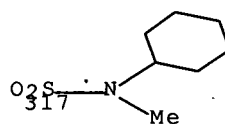
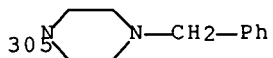
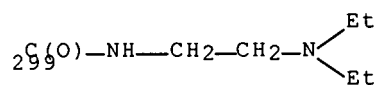
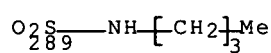
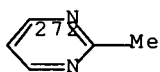
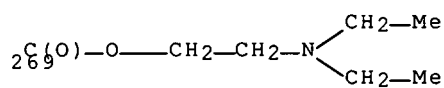
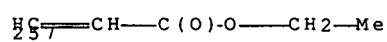
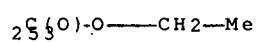
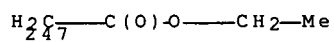
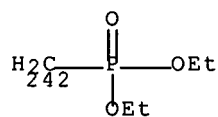
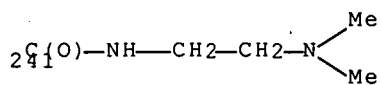
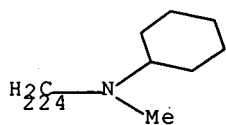


G2 = phenylene (opt. substd. by G3)  
G3 = alkyl <containing 1-6 C> /  
alkoxy <containing 1-6 C> / cycloalkyl <containing 3-7 C> /  
OH / NH<sub>2</sub> / alkylamino <containing 1-6 C> /  
dialkylamino <each alkyl containing 1-6 C> /  
(Specifically claimed: OMe)  
G4 = alkyl <containing 1-8 C>  
(opt. substd. by (1-3) G5) / alkenyl <containing 2-8 C>  
(opt. substd. by G14) / alkynyl <containing 2-8 C>  
(opt. substd. by G14) / alkoxy <containing 1-8 C>  
(opt. substd. by (1-3) G15) / 31 /  
alkoxycarbonyl <containing 1-6 C>  
(opt. substd. by (1-3) G15) / CONH<sub>2</sub> /  
alkylaminocarbonyl <containing 1-6 C> /  
dialkylaminocarbonyl <each alkyl containing 1-6 C> / aryl /  
tetrazolyl (opt. substd. by (1-3) alkyl <containing 1-6 C>) /  
thiadiazolyl (opt. substd. by (1-3) alkyl <containing 1-6 C>  
) / oxazolyl (opt. substd. by (1-3) alkyl <containing 1-6 C>  
) / pyrimidinyl (opt. substd. by (1-3)  
alkyl <containing 1-6 C>) / 37 / (Specifically claimed: 185 /  
201 / 200 / 211 / 224 / 241 / Ph / 242 / 247 / 253 / 257 /  
CONHMe / 269 / OMe / 272 / 289 / 299 / 305 / 317 / 318 /  
336 / 350 / 360 / 361 / 370 / 379)

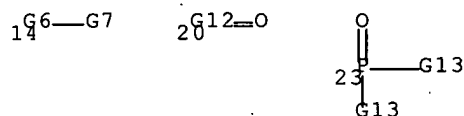
$3G^1(O)-G16$

$3G^{17}-G18$

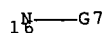




G5 = NH<sub>2</sub> / 14 / heterocycle <containing 1-4 heteroatoms, 1 or more N, zero or more O, zero or more S (no other heteroatoms), attached through 1 or more N, monocyclic> (opt. substd. by (1-3) G11) / 20 / 23 / alkoxycarbonyl <containing 1-6 C>



G6 = NH / 16



G7 = alkyl <containing 1-6 C> (opt. substd. by (1-3) G8) / cycloalkyl <containing 3-7 C> (opt. substd. by (1-3) G8)

G8 = NH<sub>2</sub> / alkylamino <containing 1-6 C> / dialkylamino <each alkyl containing 1-6 C> / heterocycle <containing 5-8 atoms, 1 or more heteroatoms, 1 or more N, zero or more O, zero or more S (no other heteroatoms), attached through 1 or more N, 5- to 8-membered monocyclic ring> (opt. substd. by (1-3) G9) / 18 / OH / alkoxycarbonyl <containing 1-6 C> / CO<sub>2</sub>H / aryl / heterocycle <containing 5-6 atoms, 1-3 heteroatoms, 1-2 N, 0-1 O, 0-1 S (no other heteroatoms), aromatic, 2 or more double bonds, 5- to 6-membered monocyclic ring> (opt. substd. by (1-3) alkyl <containing 1-6 C>)



G9 = alkyl <containing 1-6 C> / alkoxy <containing 1-6 C> / alkyl <containing 1-6 C> (substd. by 1 or more aryl) / alkoxycarbonyl <containing 1-6 C> / CO<sub>2</sub>H / OH

G10 = heterocycle <containing 5-8 atoms, 1 or more heteroatoms, 1 or more N, zero or more O, zero or more S (no other heteroatoms), attached through 1 or more N, 5- to 8-membered monocyclic ring> (opt. substd. by (1-3) G9)

G11 = alkyl <containing 1-6 C> (opt. substd. by 1 or more aryl) / alkoxycarbonyl <containing 1-6 C> / CO<sub>2</sub>H / OH

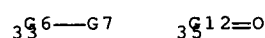
G12 = heterocycle <containing 1-4 heteroatoms, 1 or more N, zero or more O, zero or more S (no other heteroatoms), attached through 1 or more N, monocyclic> (opt. substd. by (1-3) G11)



- G13 = alkyl <containing 1-6 C>  
 G14 = aryl / alkoxy carbonyl <containing 1-6 C>  
 G15 = NH<sub>2</sub> / 27 / heterocycle <containing 1-4 heteroatoms,  
 1 or more N, zero or more O, zero or more S (no other  
 heteroatoms), attached through 1 or more N, monocyclic>  
 (opt. substd. by (1-3) G11) / 29 / OH



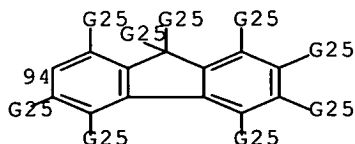
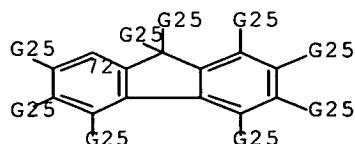
- G16 = NH<sub>2</sub> / 33 / heterocycle <containing 1-4 heteroatoms,  
 1 or more N, zero or more O, zero or more S (no other  
 heteroatoms), attached through 1 or more N, monocyclic>  
 (opt. substd. by (1-3) G11) / 35 / OH

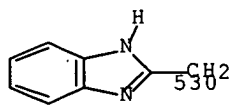
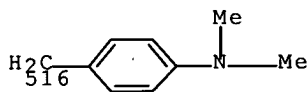
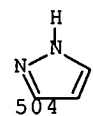
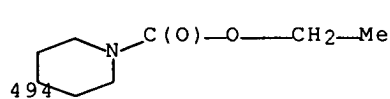
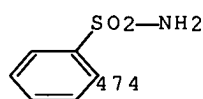
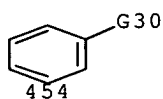
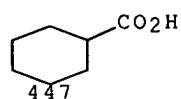
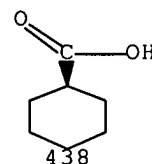
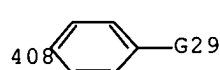
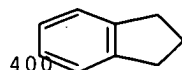
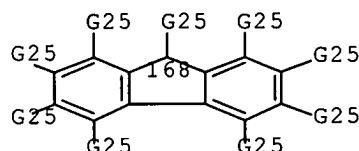
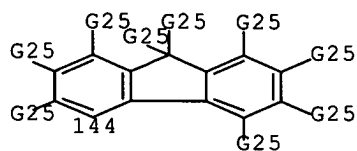
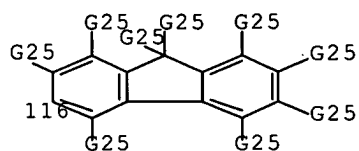


- G17 = S(O) / SO<sub>2</sub>  
 G18 = NH<sub>2</sub> / alkylamino <containing 1-6 C> /  
 dialkylamino <each alkyl containing 1-6 C> /  
 heterocycle <containing 5-8 atoms, 1 or more heteroatoms,  
 1 or more N, zero or more O, zero or more S (no other  
 heteroatoms), attached through 1 or more N,  
 5- to 8-membered monocyclic ring>  
 (opt. substd. by (1-3) G9) / 39



- G19 = alkyl <containing 1-6 C> (substd. by G20) /  
 aryl (opt. substd. by (1-3) G21) /  
 cycloalkyl <containing 3-7 C> (opt. substd. by (1-3) G22) /  
 carbocycle <containing 7-11 C, aromatic, 6 normalized bonds,  
 bicyclic, (0-1) 3-membered, (0-1) 4-membered,  
 (0-1) 5-membered, (1-2) 6-membered,  
 (0-1) 7-membered rings only> (opt. substd. by 1 or more G24)  
 / quinolinyl (opt. substd.) / benzothiazolyl (opt. substd.) /  
 benzimidazolyl (opt. substd.) / pyrazolyl (opt. substd.) /  
 72 / 94 / 116 / 144 / 168 / (Specifically claimed: 400 /  
 Ph (opt. substd. by 1 or more G28) / cyclohexyl /  
 2-naphthyl / cyclohexyl / 408 / 438 / 447 / 454 / 474 /  
 CH<sub>2</sub>Ph / 494 / 504 / cyclopentyl / 516 / 530)





G20 = aryl (opt. substd. by (1-3) G21)  
 G21 = alkyl <containing 1-6 C> /  
 alkenyl <containing 2-6 C> / alkynyl <containing 2-6 C> /  
 alkoxy <containing 1-6 C> / OH / CN / F / CO2H /  
 cycloalkyl <containing 3-7 C> / NH2 / 42 /  
 heterocycle <containing 1-4 heteroatoms, 1 or more N,  
 zero or more O, zero or more S (no other heteroatoms),  
 attached through 1 or more N, monocyclic>  
 (opt. substd. by (1-3) G11) / 44 / 46 /  
 alkoxycarbonyl <containing 1-6 C> / 48 / pyrimidinyl /  
 thiadiazolyl / tetrazolyl / pyrazolyl / oxazolyl



G22 = OH / NH2 / 50 / heterocycle <containing 1-4  
 heteroatoms, 1 or more N, zero or more O,

zero or more S (no other heteroatoms),  
 attached through 1 or more N, monocyclic  
 (opt. substd. by (1-3) G11) / 52 / 54 /  
 alkoxycarbonyl <containing 1-6 C> / CO<sub>2</sub>H / 56

$5G6-G7$      $5G12=O$      $5G(O)-G16$      $5G17-G23$

G23 = NH<sub>2</sub> / alkylamino <containing 1-6 C> /  
 dialkylamino <each alkyl containing 1-6 C> /  
 heterocycle <containing 5-8 atoms, 1 or more heteroatoms,  
 1 or more N, zero or more O, zero or more S (no other  
 heteroatoms), attached through 1 or more N,  
 5- to 8-membered monocyclic ring>  
 (opt. substd. by (1-3) G9) / 58 / alkyl <containing 1-6 C>

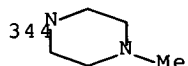
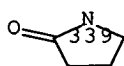
$5G10=O$

G24 = alkyl <containing 1-6 C> /  
 alkenyl <containing 2-6 C> / alkynyl <containing 2-6 C> /  
 alkoxy <containing 1-6 C> / OH / CN / F / CO<sub>2</sub>H /  
 cycloalkyl <containing 3-7 C> / NH<sub>2</sub> / 66 /  
 heterocycle <containing 1-4 heteroatoms, 1 or more N,  
 zero or more O, zero or more S (no other heteroatoms),  
 attached through 1 or more N, monocyclic>  
 (opt. substd. by (1-3) G11) / 60 / 62 /  
 alkoxycarbonyl <containing 1-6 C> / 68 / pyrimidinyl /  
 thiadiazolyl / tetrazolyl / pyrazolyl / oxazolyl

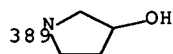
$6G12=O$      $6G(O)-G16$      $6G6-G7$      $6G17-G23$

G25 = H / R

G26 = pyrrolidino / 324 / 339 / 344

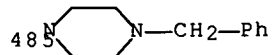
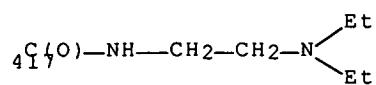


G27 = OH / morpholino / pyrrolidino / 389

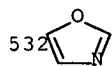
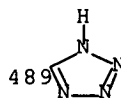
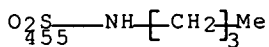
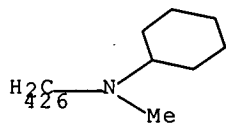


G28 = Me / OMe / F / CN

G29 = cyclohexyl / morpholino / 417 / 467 / 485



G30 = 426 / 455 / 465 / CONHMe / SO<sub>2</sub>NH<sub>2</sub> / 489 / 532

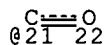
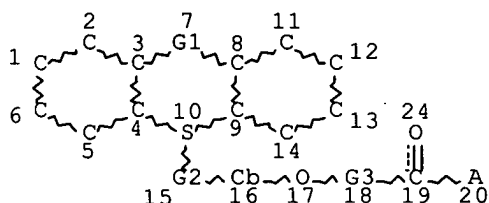


Patent location:  
Note:

claim 21  
or pharmaceutically acceptable salts

=&gt; d que 150

L3 STR

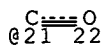
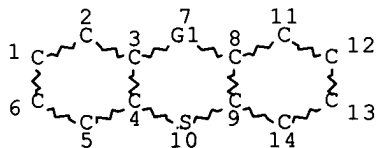


Cb @23

VAR G1=CH2/21  
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 REP G3=(1-12) CH  
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 NSPEC IS RC AT 20  
 DEFAULT MLEVEL IS ATOM  
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:  
 RSPEC I  
 NUMBER OF NODES IS 24

STEREO ATTRIBUTES: NONE  
 L5 STR



VAR G1=CH2/21  
 NODE ATTRIBUTES:  
 DEFAULT MLEVEL IS ATOM  
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 NUMBER OF NODES IS 16

STEREO ATTRIBUTES: NONE

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 L10 8 SEA FILE=REGISTRY SUB=L7 SSS FUL L3  
 L11 1 SEA FILE=HCAPLUS ABB=ON PLU=ON L10  
 L46 1402 SEA FILE=HCAPLUS ABB=ON PLU=ON DAVIDSON, R?/AU  
 L47 22 SEA FILE=HCAPLUS ABB=ON PLU=ON HERLIHY, S?/AU  
 L48 15 SEA FILE=HCAPLUS ABB=ON PLU=ON ROWATT, B?/AU  
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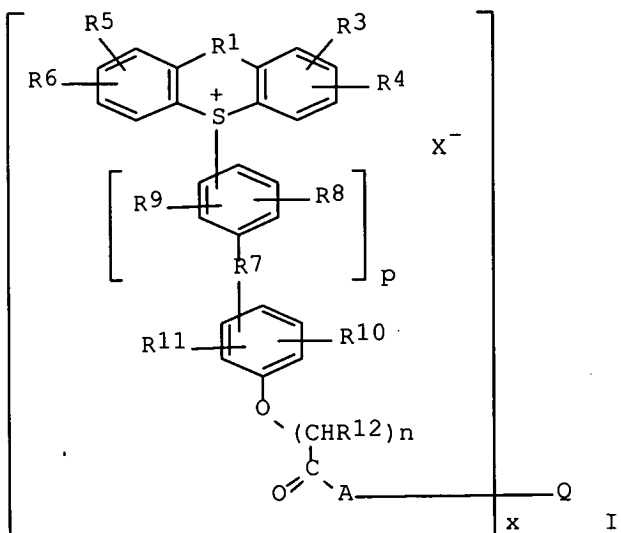
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L50 ANSWER 1 OF 1 HCAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2004:482253 HCAPLUS Full-text  
 DOCUMENT NUMBER: 141:39756  
 TITLE: Sulfonium salts useful as cationic photoinitiators  
 in energy-curable compositions and preparing cured  
 polymeric compositions  
 INVENTOR(S): Davidson, Robert Stephen; Herlihy,  
 Shaun Lawrence; Rowatt, Brian  
 PATENT ASSIGNEE(S): Sun Chemical B.V., Neth.  
 SOURCE: Brit. UK Pat. Appl., 44 pp.  
 CODEN: BAXXDU  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
GB 2396153	A	20040616	GB 2002-29081	20021212
CA 2509229	A1	20040701	CA 2003-2509229	20031210
WO 2004055000	A1	20040701	WO 2003-US39098	20031210
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG AU 2003300838 A1 20040709 AU 2003-300838 20031210 EP 1581513 A1 20051005 EP 2003-813361 20031210 EP 1581513 B1 20070214 R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK BR 2003016763 A 20051025 BR 2003-16763 20031210 JP 2006518332 T 20060810 JP 2004-560739 20031210 US 2006241200 A1 20061026 US 2006-538243 20060515 PRIORITY APPLN. INFO.: GB 2002-29081 A 20021212 WO 2003-US39098 W 20031210				

OTHER SOURCE(S): MARPAT 141:39756  
 ED Entered STN: 16 Jun 2004  
 GI



AB Comps. have the formula I; where R1 = direct bond, O, S, CH2, >C:O, (CH2)2 or NRA, Ra = H or C1-12-alkyl; R3-6 = H and substituents below; R8-11 = H, OH, and C1-4 alkyl; or R9 and R11 are joined to form a fused ring system with the benzene rings to which they are attached; R7 = direct bond, O or CH2; p is 0 or 1; substituents = alkyl, alkoxy, alkenyl, halogen, nitric, hydroxyl, aryl, aralkyl, aryloxy, aralkyloxy, arylalkenyl, cycloalkyl, carboxy, carboxyalkoxy, alkoxycarbonyl, aryloxycarbonyl, alkylcarbonyloxy, alkanesulfonyl, arenesulfonyl, alkanoyl or arylcarbonyl; n = 1-12; R12 represents a hydrogen atom, a Me group or an Et group, and, when n is greater than 1, the groups or atoms represented by R12 may be the same as or different from each other; A = [O(CHR13CHR14)a]y, [O(CH2)bCO]y, or [O(CH2)bCO](y-1)-[O(CHR13CHR14)a], where 1 of R13 and R14 = H and the other is H, Me or Et; a = 1-2; b = 4-5; Q is a residue of a polyhydroxy compound having 2-6 hydroxy groups; x >1 but no greater than the number of available hydroxyl groups in Q; and when x >1 but ≤2, y = 1-10; or when x >2, y = 3-10; X is an anion; and esters. The comps. are useful as cationic photoinitiators, especially for use in surface coating applications, such as printing inks and varnishes intended to be cured by polymerization initiated by radiation.

IT 701916-02-1P 701916-07-6P 701916-10-1P  
701916-14-5P

(polymeric sulfonium salt cationic photoinitiators in energy-curable compns.)

RN 701916-02-1 HCAPLUS

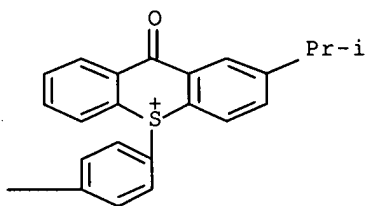
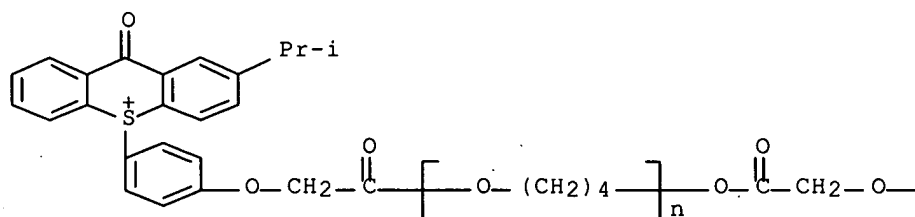
CN Poly(oxy-1,4-butanediyl),  $\alpha$ -[[4-[2-(1-methylethyl)-9-oxo-9H-thioxanthenium-10-yl]phenoxy]acetyl]- $\omega$ -[[[4-[2-(1-methylethyl)-9-oxo-9H-thioxanthenium-10-yl]phenoxy]acetyl]oxy]-, bis[hexafluorophosphate(1-)] (9CI) (CA INDEX NAME)

CM 1

CRN 701916-01-0

$$\text{CMF} \quad (\text{C}_4 \text{ H}_8 \text{ O})_n \text{ C}_{48} \text{ H}_{40} \text{ O}_7 \text{ S}_2$$

CCI    PMS

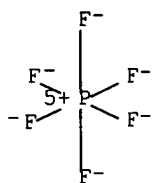


CM 2

CRN 16919-18-9

CMF F6 P

CCI CCS



RN 701916-07-6 HCAPLUS

CN Poly(oxy-1,4-butanediyl),  $\alpha$ -[2-[4-[2-(1-methylethyl)-9-oxo-9H-thioxanthenium-10-yl]phenoxy]-1-oxopropyl]- $\omega$ -[2-[4-[2-(1-methylethyl)-9-oxo-9H-thioxanthenium-10-yl]phenoxy]-1-oxopropoxy]-, bis[hexafluorophosphate(1-)] (9CI) (CA INDEX NAME)

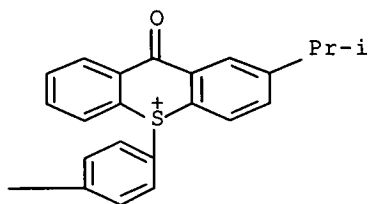
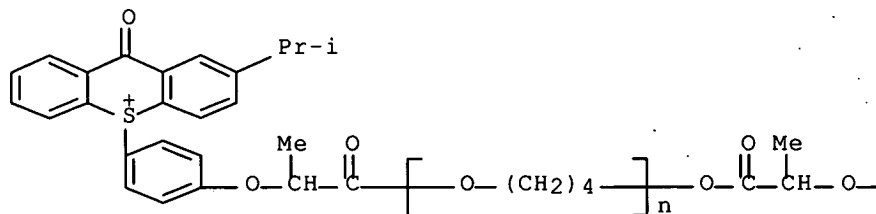
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CRN 701916-06-5

CMF (C4 H8 O)<sub>n</sub> C50 H44 O7 S2

CCI PMS



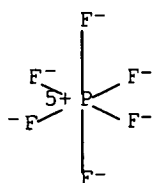


CM 2

CRN 16919-18-9

CMF F6 P

CCI CCS



RN 701916-10-1 HCAPLUS

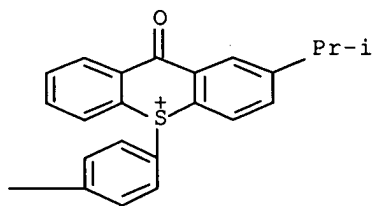
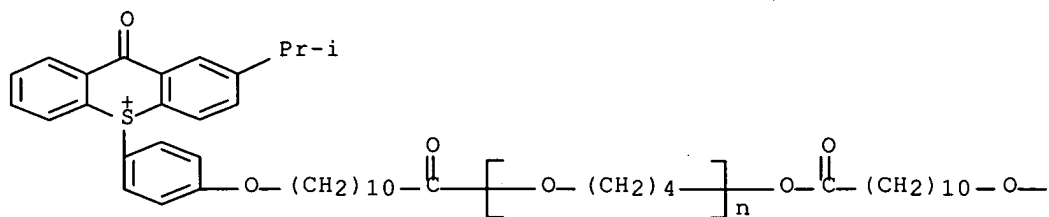
CN Poly(oxy-1,4-butanediyl),  $\alpha$ -[11-[4-[2-(1-methylethyl)-9-oxo-9H-thioxanthenium-10-yl]phenoxy]-1-oxoundecyl]- $\omega$ -[[11-[4-[2-(1-methylethyl)-9-oxo-9H-thioxanthenium-10-yl]phenoxy]-1-oxoundecyl]oxy]-, bis[hexafluorophosphate(1-)] (9CI) (CA INDEX NAME)

CM 1

CRN 701916-09-8

CMF (C4 H8 O)n C66 H76 O7 S2

CCI PMS

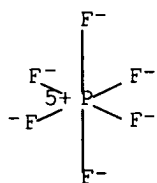


CM 2

CRN 16919-18-9

CMF F6 P

CCI CCS



RN 701916-14-5 HCAPLUS

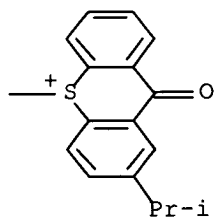
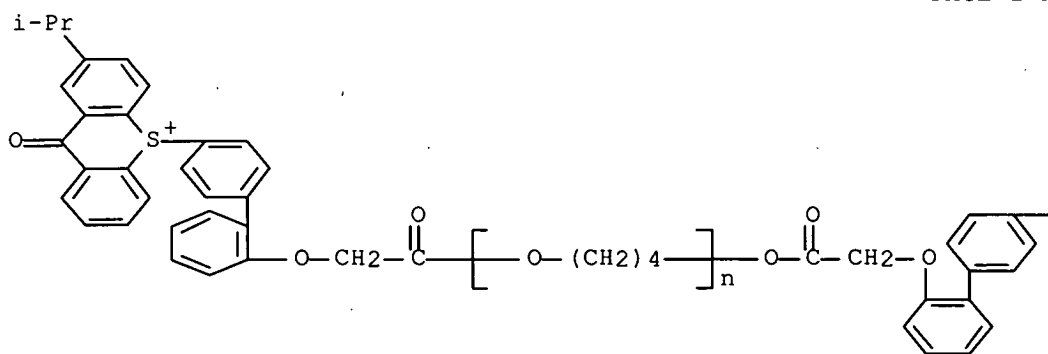
CN Poly(oxy-1,4-butanediyl),  $\alpha$ -[[4'-[2-(1-methylethyl)-9-oxo-9H-thioxanthenium-10-yl][1,1'-biphenyl]-2-yl]acetyl]- $\omega$ -[[[4'-[2-(1-methylethyl)-9-oxo-9H-thioxanthenium-10-yl][1,1'-biphenyl]-2-yl]acetyl]oxy]-, bis[hexafluorophosphate(1-)] (9CI) (CA INDEX NAME)

CM 1

CRN 701916-13-4

CMF (C4 H8 O)<sub>n</sub> C60 H48 O7 S2

CCI PMS

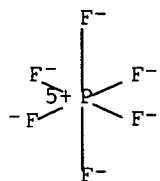


CM 2

CRN 16919-18-9

CMF F6 P

CCI CCS



IC ICM C07D335-16  
 ICS C07D333-76  
 CC 42-3 (Coatings, Inks, and Related Products)  
 Section cross-reference(s): 37, 67  
 IT 701916-02-1P 701916-04-3P 701916-07-6P

10/538,243

701916-10-1P 701916-14-5P .

(polymeric sulfonium salt cationic photoinitiators in  
energy-curable compns.)

REFERENCE COUNT: 4 . THERE ARE 4 CITED REFERENCES AVAILABLE FOR  
THIS RECORD. ALL CITATIONS AVAILABLE IN THE  
RE FORMAT